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Google Scholar Citations:

<http://scholar.google.com/citations?user=gTS6UCsAAAAJ>

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## Research Objectives

Improve communication and image processing systems

- Deriving discrete-time signal processing theory
- Developing algorithms with embedded implementation constraints
- Validating algorithms through desktop simulation
- Disseminating algorithms in publicly available toolboxes
- Mapping algorithms to embedded targets for feasibility
- Evaluating application performance vs. complexity tradeoffs of algorithms in full system testbeds

Improve system-level design automation methods

- Developing distributed scalable software frameworks for high-performance computing
- Mapping of floating-point to fixed-point arithmetic for low-power implementation

## Application Spaces

- Wireless Communication Systems
  - Massive Multi-Antenna Systems for Millimeter Wave Communications: energy-efficient uplink methods for multiantenna millimeter wave communication receivers with low-resolution analog-to-digital converters (ADCs), including adaptive ADC quantization, antenna selection, user selection, coordinated multipoint, and channel estimation (on-going)
  - Interference-aware communication system design: modeling interference in heterogeneous wireless networks, and mitigating interference using physical and medium access control (MAC) layer methods, for sensor, Wi-Fi, Wimax and cellular networks (completed)
  - Multiuser OFDM resource allocation: linear complexity algorithms for allocation of user sub-carrier frequencies and power to maximize continuous and discrete bit rates (esp. for Wimax and cellular systems) that are suitable for implementation in fixed-point arithmetic (completed)
- Wired Communication Systems
  - Multicarrier equalization for ADSL: developed channel shortening training method that doubled achievable bit rate and dual-path channel shortening structure that increased achievable bit rate by an additional 20%, both of which are amenable to implementation in fixed-point arithmetic (completed)

- Two-transmitter two-receiver ADSL testbed: evaluated design tradeoffs for peak-to-average power ratio reduction, echo cancellation, bit allocation, equalization, and crosstalk cancellation, and implemented real-time testbed that doubled the bit rate for a two-transmitter two-receiver system vs. a single-transmitter single-receiver system (completed)
  - Smart grid communications: improving bit rates/reliability in powerline communication systems by mitigating interference (completed)
- Image and Video Processing Systems
  - Image acquisition: improving photographic composition (completed)
  - Image hashing: fast indexing for image retrieval and image authentication (completed)
  - Image and video display: image printing, and video display on bistable screens (completed)
  - Video acquisition: reducing rolling shutter artifacts in handheld cameras (completed)
- Electronic Design Automation Tools
  - Models of computation for streaming data: developed scalable software framework for achieving high performance through concurrent and distributed processing (completed)
  - Low power design: automated transformations of digital signal processing implementations from floating-point to fixed-point arithmetic and data types (completed)

## Education

- *Georgia Institute of Technology*, Atlanta, GA.  
 Doctor of Philosophy in Electrical Engineering, Sep. 1993.  
 Dissertation title: *A Knowledge-Based Environment for the Design and Analysis of Multidimensional Multirate Signal Processing Algorithms.*
- *Georgia Institute of Technology*, Atlanta, GA.  
 Master of Science in Electrical Engineering, Dec. 1988.
- *Rose-Hulman Institute of Technology*, Terre Haute, IN.  
 Double Major in Electrical Engineering and Computer Science, May 1987.

## Academic Positions

- Professor, Dept. of ECE, The University of Texas, Austin, TX, 9/05–present
 

Conduct research in theory and implementation of communications and image processing systems. Improve connection speeds for Wi-Fi, cellular and smart grid communication systems by mitigating interference and using multiple channels. Investigate large sensor arrays for cellular and underwater communications. Improve video quality during video acquisition by smart phones by mitigating rolling shutter artifacts and during video playback on micromirror displays. Conduct subjective studies and develop new methods for assessing quality in computer graphics and high-dynamic range images. Build full-system testbeds to deploy in the field for proving out ideas.

In communication systems, developed

  - algorithms for optimal linear complexity resource allocation for orthogonal frequency division multiple access basestations (with applications to WiMax and LTE cellular communications)

- algorithms for adaptive doubly-selective channel prediction with linear complexity for multicarrier communication systems (with applications to underwater acoustic communications)
- algorithms for impulse noise modeling and mitigation in wired and wireless receivers (with applications to Wi-Fi, powerline and other communications over unlicensed bands)
- real-time testbeds for multichannel multicarrier wired communications (with applications to MIMO ADSL)
- real-time testbeds for smart grid communications (with applications to G3, PRIME, IEEE 1901.2, IEEE 802.11ac and IEEE 802.15.4g standards)
- real-time testbeds for multichannel underwater acoustic communication systems.

In image processing systems, developed

- algorithms for removing rolling shutter artifacts during video acquisition by fusing inertial measurements with video analysis
- algorithms for showing images/video on micromirror displays with improved visual quality, and
- algorithms for high-resolution three-dimensional sonar beamforming and their mapping onto real-time high-performance computer architectures

Graduated 16 Ph.D. students and 7 MS report students in rank of Professor, for a total of 29 Ph.D. and 13 MS report graduates in faculty career.

Direct the Embedded Signal Processing Laboratory, which is part of the Wireless Networking and Communications Group and Center for Perceptual Systems.

Teach *EE445S Real-Time Digital Signal Processing Laboratory* (junior/senior course), and *EE313 Linear Systems and Signals* (sophomore required course). Taught graduate courses in *EE381K-14 Multidimensional Digital Signal Processing* and *EE382C-9 Embedded Software Systems*. In a course number, the middle digit number indicates the level of the course: 0 first year, 1 second year, 2-7 third/fourth year, and 8-9 graduate. The first digit indicates the number of credit hours.

Provided open courseware for spring 2014 EE 445S Real-Time Digital Signal Processing Laboratory course to facilitate self-study on the topic. Open courseware includes (1) YouTube videos of lectures, (2) lecture slides and handouts, (3) homework assignments and solutions, (4) laboratory recitation slides and assignments, and (5) current and previous midterm exams with solutions. Discussions of midterm #1 solutions and several homework set solutions are also available on YouTube. 58,231 views of YouTube lectures as of Aug. 18, 2019.

Recent “overall instructor ratings” on student course instructor surveys for all ECE courses taught since fall 2009 are shown below. Ratings are on a five-point scale, with 5 being most favorable and 1 being least favorable. Average “overall instructor ratings” among all undergraduate ECE courses taught in a particular semester across all instructors are given below (with the standard deviation given in parenthesis): 3.94 in fall 2013 (0.68), 4.07 in spring 2014 (0.62), 4.19 in fall 2014 (0.42), 4.18 in spring 2015 (0.54), 4.03 in fall 2015 (0.57), 4.14 in spring 2016 (0.58), 4.13 in fall 2016 (0.59) 4.10 in spring 2017 (0.60), 4.12 in fall 2017 (0.55), 4.22 in spring 2018 (0.55), 4.19 in fall 2018 (0.53), and 4.30 in spring 2019 (0.43),

A mezzanine course is required by at least one undergraduate specialization; a required course is required by the BS EE and/or BS Comp Eng major; and an elective is neither a mezzanine nor a required course.

Semester	Undergraduate Course	Level	Rating	Enrolled	Responses
Fall 2019	EE445S Real-Time DSP Lab	mezzanine		28	
Spring 2019	EE445S Real-Time DSP Lab	mezzanine	4.9	28	18
Fall 2018	EE445S Real-Time DSP Lab	mezzanine	4.6	37	27
Fall 2018	EE313 Linear Systems & Signals	sophomore	4.5	72	53
Spring 2018	EE445S Real-Time DSP Lab	mezzanine	5.0	24	17
Fall 2017	EE445S Real-Time DSP Lab	mezzanine	4.5	43	31
Fall 2017	EE313 Linear Systems & Signals	sophomore	4.6	59	42
Spr 2017	EE445S Real-Time DSP Lab	mezzanine	4.9	37	32
Fall 2016	EE445S Real-Time DSP Lab	mezzanine	4.7	47	34
Spr 2016	EE445S Real-Time DSP Lab	mezzanine	4.8	52	34
Fall 2015	EE445S Real-Time DSP Lab	mezzanine	4.6	37	28
Spr 2015	EE445S Real-Time DSP Lab	mezzanine	4.4	46	32
Fall 2014	EE445S Real-Time DSP Lab	mezzanine	4.7	49	31
Spr 2014	EE445S Real-Time DSP Lab	mezzanine	4.8	43	21
Fall 2013	EE445S Real-Time DSP Lab	mezzanine	4.9	34	24
Spr 2013	EE445S Real-Time DSP Lab	mezzanine	4.8	29	25
Fall 2012	EE445S Real-Time DSP Lab	mezzanine	4.6	47	34
Spr 2012	EE445S Real-Time DSP Lab	mezzanine	4.7	53	35
Fall 2011	EE445S Real-Time DSP Lab	mezzanine	4.3	53	40
Spr 2011	EE445S Real-Time DSP Lab	mezzanine	4.6	42	32
Fall 2010	EE445S Real-Time DSP Lab	mezzanine	4.6	58	46
Fall 2010	EE313 Linear Systems & Signals	required	4.1	37	30
Spr 2010	EE345S Real-Time DSP Lab	elective	4.6	51	40
Fall 2009	EE345S Real-Time DSP Lab	elective	4.4	54	40

- Associate Professor, Dept. of ECE, The University of Texas, Austin, TX, 9/00–8/05

Developed research and education program in embedded signal and image processing systems, esp. in multicarrier wireless and wireline communication systems, and image acquisition and rendering systems. Also conducted research in perceptual image hashing and network tomography. Graduated 10 Ph.D. students and one MS report student in rank as an Associate Professor. Chaired first major undergraduate ECE curriculum reform to take place in more than two decades.

Researched the design and real-time implementation of ADSL transceivers. Developed off-line algorithms to design equalizers to reach the upper bound on achievable bit rate for single path, dual path, and filter bank equalizers. Developed real-time on-line algorithms for single path and dual path equalizers to achieve 95% of the matched filter bound. Released several versions of a freely distributable ADSL transceiver design toolbox for Matlab.

Conducted research in the design and real-time implementation of desktop printer pipelines. Made major contributions in improving the visual quality of halftoning by error diffusion in printer pipelines for both grayscale and color images. Developed still image quality measures useful for evaluating and optimizing halftoning methods. Integrated visual quality measures into the halftoning algorithms themselves. Released several versions of a image halftoning design toolbox for Matlab.

Taught four courses regularly to support a research and education program in embedded signal and image processing systems: *Multidimensional Digital Signal Processing* (graduate course), *Embedded Software Systems* (graduate course), *Real-Time Digital Signal Processing Laboratory* (junior/senior elective), and *Linear Systems and Signals* (sophomore required course).

Directed the Embedded Signal Processing Laboratory, which is part of the Wireless Networking and Communications Group and Center for Perceptual Systems.

Offered and accepted Visiting Associate Professor positions at the American University of Beirut in summer 2005 and Cornell University in fall 2002.

- *Assistant Professor, Dept. of ECE, The University of Texas, Austin, TX, 9/96–8/00*

Developed a research and education program in embedded signal and image processing systems. Graduated three Ph.D. students and five MS report students. Introduced three new courses.

In research, developed theory, fast algorithms, embedded software, and design automation tools for signal processing, image processing, and communication systems. For communication systems, developed multicarrier equalizers and smart antennas. For signal processing systems, developed acoustic echo cancellers, dual-tone multi-frequency (touchtone) detectors, phase locked loops, and sonar beamformers. For image processing, developed image halftoning and quality assessment methods.

In the curriculum, introduced three new courses:

- *Multidimensional Digital Signal Processing* (graduate course) presents theory, algorithms, and design tradeoffs in image, video, seismic, and tomographic processing;
- *Embedded Software Systems* (graduate course) introduces system-level design: dataflow, synchronous/reactive, and discrete-event models; cosimulation; software synthesis; and CAD tools.
- *Real-Time Digital Signal Processing Laboratory* (junior/senior elective) describes the design tradeoffs in mapping signal processing and communication algorithms onto programmable digital signal processor architectures. In the lab component, students design, implement, and test a voiceband transceiver using digital signal processor boards and development tools.

Taught *Linear Systems and Signals* (sophomore required course), which gives students a mathematical foundation for analyzing linear signal processing, communication, and control systems. Also, supervised senior design project students.

Founded and directed the Embedded Signal Processing Laboratory, which was part of the Center for Telecommunications and Signal Processing Research and Center for Vision and Image Sciences.

- *Post-Doctoral Researcher, University of California, Berkeley, CA, 10/93–8/96*

Researched electronic design automation for signal processing and communication systems in Prof. Edward A. Lee's Ptolemy Project. Prototyped research ideas in the Ptolemy software environment, an electronic design automation tool for system specification, simulation, and synthesis, and in the Signal Processing Packages for Mathematica. Developed methods for designing two-dimensional rational decimators, rearranging operators in algorithms to optimize implementation, and optimizing pole-zero locations of analog filters. Developed seamless Ptolemy software environment interfaces to MATLAB for system simulation and numeric parameter calculations, and to Mathematica for system optimization and symbolic parameter calculations. (In 1998, the Ptolemy software environment was renamed Ptolemy Classic.) Helped develop a sophomore course *Introduction to Real-Time Digital Systems*. Wrote proposals, developed software, and directed student research.

- *Instructional Faculty, Dept. of EECS, University of California, Berkeley, CA, 1/95–5/95*

Taught senior undergraduate course entitled *Noise Analysis of Communication Systems*. Topics included signals, systems, transforms, analog modulation, probability, random processes, AM/FM noise analysis, sampling, quantization, pulse modulation, digital modulation, and digital noise analysis.

- *Teaching Assistant, School of EE, Georgia Institute of Technology, Atlanta, GA, 9/91–6/93*  
Integrated symbolic algebra into signals and systems courses, and developed laboratories for *Algorithms in C*. Assisted in classes and laboratories on algorithms, C, MATLAB and signal processing. Won an Outstanding Teaching Assistant award.
- *Research Assistant, Georgia Institute of Technology, Atlanta, GA, 1/90–9/93*  
Conducted doctoral research in formalizing simplification and rearrangement rules for multidimensional multirate systems and encoding the rules by computer.
- *Research Assistant, Georgia Tech Research Institute, Atlanta, GA, 6/89–12/89*  
Wrote Fortran programs to automate testing for lead and asbestos content in samples. Helped port an expert system to NExpert that diagnosed coronary disease.
- *Research Assistant, Georgia Institute of Technology, Atlanta, GA, 1/89–6/89*  
Coded a symbolic signal processing system in Lisp. Began a similar implementation in Mathematica.
- *Research Assistant, Georgia Tech Research Institute, Atlanta, GA, 9/87–12/88*  
Applied pattern recognition and image processing to part identification using C and an image processing board. Developed an expert system for diagnosing problems in a computer network.

## Other Professional Experience

- *C Programmer, Applied Computing Devices, Terre Haute, IN, 6/87–9/87*  
Helped write and debug utility programs for managing telecommunications switching operations.

## Honors and Awards

- 2019 Outstanding Professor Award, ECE Undergraduate Advisory Board, The University of Texas at Austin. Citation: “Selected by the students for a consistent display of care and excellence on and off the classroom”
- 2018 Excellence in Teaching Award from Second-Year ECE Students, ECE Undergraduate Advisory Board, The University of Texas at Austin (based on a survey of students who took second-year ECE courses in 2017-2018)
- 2017–2024 Engineering Foundation Professorship, Renewal, College of Engineering, The University of Texas at Austin (endowment providing salary supplement and discretionary funds)
- 2015 Top 10% Paper Award, IEEE International Conference on Image Processing
- 2013 Best Paper Award, IEEE International Symposium on Power Line Communications and Its Applications
- 2012 Top 10% Paper Award, IEEE International Workshop on Multimedia Signal Processing
- 2012 Best Professor Award, HKN/IEEE Student Chapter, The University of Texas at Austin (awarded by UT Austin ECE students at the May 2012 ECE Graduation Banquet)
- 2011 Texas Exes Teaching Award, The University of Texas at Austin (a university-wide teaching award given by students based on nominations by students)

- 2010–2017 Engineering Foundation Professorship, College of Engineering, The University of Texas at Austin (endowment providing salary supplement and discretionary funds)
- 2009 IEEE Fellow award "for contributions to multicarrier communications and image display"
- 2008 Gordon Lepley IV Memorial Teaching Award, Department of Electrical and Computer Engineering, The University of Texas at Austin
- 2007 National Instruments Week Virtual Instrumentation Applications Paper Finalist, Prototyping and Testing Category (Second Place)
- 2004–2010 Robert and Jane Mitchell Faculty Fellowship, College of Engineering, The University of Texas at Austin
- 2003 Nomination by graduate students for Graduate Engineering Council Faculty Appreciation Award at The University of Texas at Austin
- 2002–2003 Faculty Research Assignment, The University of Texas at Austin. Spent fall 2002 semester at Cornell University visiting Prof. C. Rick Johnson.
- 2000–2004 Mrs. Pearlie Dashiell Henderson Centennial Faculty Fellowship, College of Engineering, The University of Texas at Austin
- 2000 IEEE Student Chapter Award for "Most Animated Class"
- 1999 Halliburton, Brown and Root Young Faculty Award, College of Engineering, The University of Texas at Austin
- 1997 Institute of Electrical and Electronics Engineers Senior Membership
- 1997 National Science Foundation CAREER Award on "Scalable Software and Hardware for Image and Video Processing Systems"
- 1997 Gold CD Award, Wolfram Research Inc., Champaign, IL, to recognize the sale of more than 1000 copies of the *Signals and Systems Pack*, which had been on the market since 1995.
- 1992 Outstanding Graduate Teaching Assistant Award, School of Electrical Engineering, Georgia Institute of Technology
- 1987 Honors Key, Rose-Hulman Institute of Technology, for cumulative extra-curricular undergraduate activities

## **Memberships in Professional and Honorary Societies**

- Fellow, Institute of Electrical and Electronics Engineers (IEEE)
- Active member in the IEEE Communications Society and IEEE Signal Processing Society
- Member, American Association of University Professors
- Member, Texas State Employees Union, Communication Workers of America #6186

## **University Committee Assignments**

Active Assignments

- Chair, Faculty Council, (a.k.a. Academic Senate), 2019–2020, Chair-Elect Sep. 2018–Aug. 2019, and Member Jan. 2017–Aug. 2020, Sep. 2013–Aug. 2015 and Sep. 2008–Aug. 2012.

Faculty Council plays a vital role in shared governance at The University of Texas at Austin by

- Evaluating, monitoring, and providing recommendations on undergraduate curriculums and degree programs including educational policies; admission, honors, and degree requirements; and catalog changes
- Developing and updating University policies including
  - \* Faculty evaluation, workload, compensation, academic freedom, and grievances
  - \* Student services, activities, admissions, and employment
  - \* Budgets, libraries, research, information technology, and other areas

As Faculty Council Chair, my priorities are

- Promote safe, diverse, equitable, inclusive, supportive environments for all students, staff faculty
- Support mental health and counseling services for students, staff, faculty to meet demand
- Strengthen shared governance at the University for students, staff, faculty, administrators

The monthly Faculty Council meetings provide a communication platform for elected faculty, staff and student representatives and administrators to discuss issues and develop solutions to make UT an even better place to work and study. As Faculty Council Chair, I coordinate the Faculty Council (110 members) and 27 standing committees (270 members). As Chair, I've been appointed to the following committees:

- Member, Advisory Committee on Ethics
  - Member, Council for LGBTQ+ Access, Equity, and Inclusion
  - Member, Council for Racial and Ethnic Equity and Diversity (CREED)
  - Member, Executive Compliance Committee
  - Chair, Faculty Council Executive Committee, which meets monthly to plan Faculty Council meetings and other actions, and which separately meets monthly with the President, Provost, Graduate School Dean, Senior Vice Provost of Faculty Affairs, Vice President of Legal Affairs, and other upper administrators.
  - Member, Faculty Grievance Policy Evaluation Committee
  - Member, Graduate Assembly,
  - Member, Graduate Assembly Agenda Committee
  - Member, Policy Office Advisory Group
  - Member, Senate Bill 212 Implementation Committee
  - Member, University Faculty Gender Equity Council, Sep. 2017–Aug. 2020, Sep. 2014–Aug. 2015.  
*Advises the Provost on matters related to gender issues at The University of Texas at Austin and makes recommendations for improving the equitable and inclusive environment for all faculty.*
  - Member, UT System Faculty Advisory Council
  - Member, Vice President's Council
- Member, Texas Council of Faculty Senates, Sep. 2018–present. *Organization brings together elected faculty leaders from all 39 public four-year colleges and universities in the State of Texas to discuss common issues and develop action plans for our campuses. Meetings occur three times each year.*

- Executive Committee, Texas Council of Faculty Senates
- Member, National Council of Faculty Senates Mar. 2019–present
- Member, Well-Being in Learning Environments Ad-Hoc Committee, Counseling and Mental Health Center, Mar. 2018–present. *Contributed to resources for students, resources for instructors, a short video, and resources for graduate students.*
- Chair, Dept. of ECE, Teaching Evaluation Committee, Oct. 2017–present and Member Oct. 2011–Sep. 2017, *Coordinates the annual peer teaching evaluations of the 80 tenured, tenure-track, and non-tenure-track faculty in the department.*
- Member, Dept. of ECE, Teaching Assistant Recruiting Committee, Oct. 2018–present and Member Sep. 2007–Sep. 2017.  
*Determine allocations of graduate TA positions to admission committees, match 30–40 newly enrolling graduate students on TA offers into fall and spring TA positions, and run TA orientation sessions.*
- Member, Graduate ECE Admissions, Computer Engineering Curriculum Track Committee, Jan. 2007–present. *Evaluate 500+ applications for graduate ECE studies on the computer engineering curriculum track each year, coordinate financial support offers, and host recruiting site visit.*
- Member, Dept. of ECE, Budget Council, Sep. 2005–present, *Allocate new faculty positions from Dean's Office to research topics, and evaluate faculty members for tenure and promotion.*
- Member, Dept. of ECE, Architecture, Computer Systems, and Embedded Systems Track, Curriculum Committee, Nov. 2001–present. *Evaluate and update undergraduate and graduate curriculums in computer engineering.*
- Member, Dept. of ECE, Decision, Information and Communication Engineering Track, Curriculum Committee, Nov. 2001–present. *Evaluate and update undergraduate and graduate curriculums in communications, networks and systems.*
- Member, Graduate ECE Program, Decision, Information and Communication Engineering Track, Admissions Committee, Sep. 1998–present, and Chair, Sep. 1999–Jan. 2007.  
*Evaluate 700+ applications for graduate ECE studies each year, coordinate financial support offers, and host recruiting site visit(s).*
- Member, Dept. of ECE, Decision, Information and Communication Engineering Track, Sep. 1996–present, *Evaluate and update PhD qualifying exam procedures, and propose future growth plans in faculty lines to the Budget Council.*
- Member, Dept. of ECE, Architecture, Computer Systems, and Embedded Systems Faculty Committee, Sep. 1996–present, *Evaluate and update PhD qualifying exam procedures, and propose future growth plans in faculty lines to the Budget Council.*
- Member, Dept. of ECE, Graduate Studies Committee, Sep. 1996–present

#### Past Assignments

- Chair, University Faculty Committee of Counsel on Academic Freedom and Responsibility, Sep. 2017–Aug. 2019, Sep. 2014–Aug. 2015, and Sep. 2010–Aug. 2013, and Member Sep. 2015–Aug. 2018 and Sep. 2008–Aug. 2010

*Evaluate, propose changes to, and advise the President on university procedures to evaluate faculty for tenure, promotion and post-tenure review and to safeguard academic freedom in teaching, research and expression. Committee also hears appeals concerning allegations of violations of procedures and/or academic freedom safeguards, esp. in tenure/promotion denials and post-tenure review decisions.*

*I co-authored a “Resolution on Academic Analytics” to recommend not using Academic Analytics— a data crawler and data aggregator— in evaluating faculty performance because its data is incomplete, unverified and decontextualized. Faculty members have no access to review, correct and ratify the data. The resolution was passed by Faculty Council on January 22, 2018, and was the subject of an January 24, 2018, article “UT-Austin Professors Join Campaign Against Faculty-Productivity Company” in the Chronicle of Higher Education.*

*I co-authored a Living/Competitive Wage Motion for graduate teaching and research assistants in Spring 2010. In Spring 2010, I brought the motion to the attention of Associate Dean John Ekerdt (Engineering) who implemented annual raises to the minimum salaries for graduate teaching and research assistants in the college to exceed a Living Wage of \$2,178/month in fall 2020. Motion co-author Prof. Andrea Gore (Pharmacy) successfully approached her college to raise its minimum salaries to exceed a Living Wage. Other colleges with minimum salaries exceeding a Living Wage include the Jackson School of Geosciences and the College of Natural Science.*

- Member, University Faculty Faculty Committee on Committees, Sep. 2018–Aug. 2019.  
*Advises the President on personnel, composition and responsibilities of faculty standing committees.*
- Chair, University Faculty Advisory Committee on Budgets, Sep. 2017–2018 and Sep. 2014–Aug. 2016, and Member Sep. 2013–Aug. 2014.  
*Reviews University budgets and make recommendations the President and Provost.*
- Chair, Dept. of ECE, Curriculum Committee, Jan. 2011–Oct. 2017.  
*Coordinate undergraduate curriculum content for faculty vote. Interview adjunct/lecturer candidates for faculty vote on hiring. Evaluate adjuncts/lecturers and recommend annual raises to department chair. Monitor/report course instructor survey ratings from students to faculty. Assign instructors for undergraduate and graduate courses. Allocate/assign undergraduate/graduate teaching assistant (TA) positions. Recommend high-performing TAs for awards and low-performing TAs for training/mediation. Create/manage \$2.6M annual lecturer/TA budget.*
- Member, University Student Life Committee, Jan. 2017–Aug. 2017.
- Member, School of Undergraduate Studies, Digital Arts & Media Bridging Disciplines Program Committee, Jan. 2005–May 2017, *Evaluate applications for admission to this interdisciplinary certificate program (equivalent to a minor) and promote this program within the College of Engineering.*
- Member, University Tuition Policy Advisory Committee, Sep. 2015–Aug. 2016. *Recommends to the President the amount of tuition needed to fund the university’s forecast core academic budget, which includes expenses such as salaries, utilities and college programs. The committee recommended a 3% tuition increase for 2016–2017 and again for 2017–2018, which was approved by The University of Texas Board of Regents on Monday, Feb. 29, 2016, as the first tuition increase for Texas resident undergraduates since 2011.*
- Chair, Dept. of ECE, Silicon Labs Endowed Chair Search Committee, Nov. 2013–Dec. 2015.  
*Description of faculty opening in analog, mixed-signal and RF IC design.*
- Member, Faculty Council Executive Committee, Sep. 2013–Aug. 2014.  
*Determines agenda for faculty council meetings, meets monthly with the President and Provost and*

*gives feedback to the UT System and UT Board of Regents on proposed and existing policies. Prof. Evans focused efforts on fighting for faculty against intrusion on academic freedom and civil liberties in The University of Texas System draft policies on conflict of commitment and their implementation on the UT Austin campus.*

- Chair, Dept. of ECE, Course Scheduling Committee, Jan. 2002–Aug. 2012.  
*Schedule 100+ ECE lecture sections each fall/spring semester.*
- Chair, Dept. of ECE, Post-Tenure Review Committee, Oct. 2010–Jan. 2011.
- Chair, Administrative Committee, Graduate Assembly, Sep. 2009–Aug. 2011.  
*Evaluate and propose changes to rules and regulations governing teaching assistants and assistant instructors.*
- Member, Graduate Assembly, Sep. 2008–Aug. 2011.  
*Elected to represent engineering concerning all matters concerning graduate studies and graduate students.*
- Member, Dept. of ECE, Privy Council, Sep. 2004–Oct. 2010.  
*Advise the Department Chair on all faculty and curriculum matters.*
- Member, Dept. of ECE, Senior Design Projects Committee, Jan. 2004–Oct. 2010. *Develop content and scope for the six variations of the required capstone design project.*
- Member, Cockrell School of Engineering, Ad-hoc Panel on Strategic Planning on Wireless Communications, Sep. 2009–Aug. 2010.  
*Help the Cockrell School of Engineering engage industry and government more deeply in funded interdisciplinary research collaboration involving wireless communications, networking and applications.*
- Chair, Dept. of ECE, Faculty Search Committee, Dec. 2009–May 2010, *Evaluate candidates for a tenure-track faculty position in embedded systems, and recommend leading candidates to the ECE faculty for interviews and formal offers.*
- Member, Dept. of ECE, Faculty Search Committee, Feb. 2009–Apr. 2009, *Evaluate candidates for tenure-track faculty position recommended by faculty search subcommittees, and recommend leading candidates to the ECE Budget Council.*
- Member, Dept. of ECE, Faculty Search Subcommittee, Computer Architecture. Jan. 2009–Apr. 2009, *Evaluate candidates for tenure-track faculty positions in computer architecture and recommend leading candidates to Faculty Strategic Hiring Committee.*
- Member, Dept. of ECE, Curriculum Reform Focus Group, Jan. 2009–May 2009, *Formulate the rau-cous year-long undergraduate ECE curriculum reform discussions for the 2010–2012 catalog into a concrete proposal. Proposal approved by the ECE faculty in May 2009.*
- Member, Administrative Committee, Graduate Assembly, Sep. 2008–Aug. 2009.  
*Evaluate and propose changes to funding and rules/regulations for TAs and AIs.*
- Member, Dept. of ECE, Electromagnetics & Acoustics Faculty Search Committee, Nov. 2007–May 2008. *Evaluated faculty applications and hosted faculty candidates. As a result, Andrea Alu and Neal Hall were hired into 2008–2009 faculty positions.*

- Chair, University Responsibilities, Rights, and Welfare of Graduate Student Academic Employees Committee, Sep. 2007–Aug. 2008.  
*Advise President on matters concerning TA, AI, and RA employment. To increase graduate student recruiting and retention, submitted proposal to close gap in income for TAs who do not break even in income vs. expenses without reducing the number of TA positions.*
- Member, Dept. of ECE, Curriculum and Catalog Review Committee, Jan. 2007–May 2007.
- Chair, Dept. of ECE, Embedded Systems Faculty Search Committee, Oct. 2006–May 2008.  
*Evaluated faculty applications and hosted faculty candidates. As a result, Andreas Gerstlauer was hired into a 2008–2009 faculty position.*
- Member, Dept. of ECE, Communications, Networks, and Systems Faculty Search Committee, Oct. 2006–May 2007.
- Member, University Responsibilities, Rights, and Welfare of Graduate Student Academic Employees Committee, Sep. 2006–Aug. 2007
- Member, Provost’s Office, Signature Vision Committee, May 2006–Aug. 2006.
- Member, Dept. of ECE, Post-tenure Review Committee, Jan. 2006–May 2007.
- Member, Dept. of ECE, Faculty Incentives Committee, Jan. 2004–Aug. 2008. *Evaluate ECE faculty applications submitted to Dept. Chair.*
- Member, Dept. of ECE, Mixed-Signal Chair Faculty Search Committee, Jan. 2002–May 2006. *Evaluate dosiers and host potential faculty candidates.*
- Member, Dept. of ECE, Telecommunications Faculty Search Committee, Sep. 2001–Aug. 2002.
- Member, Dept. of ECE, Texas Telecommunications Engineering Consortium (TxTEC), Ad-hoc Committee, Oct. 1996–May 2005.
- Branch Counselor, Dept. of ECE, IEEE Student Chapter, Aug. 2001–Dec. 2004,
- Member, Dept. of ECE, Department Chair Search Committee, Spring 2001.
- Chair, Dept. of ECE, Reform of BSEE Curriculum Committee, Nov. 1999–Mar. 2001
- Member, Dept. of ECE, TxTEC Undergraduate Scholarship and Graduate Fellowship Awards Subcommittee, Sep. 1998–May 2005,
- Chair, Dept. of ECE, Undergraduate Communications Curriculum Committee, Sep. 1998–Aug. 2001 (Member, Sep. 1996–Aug. 1998)
- Member, College of Engineering, Outreach Education / Instructional Technology Committee, Aug. 1997–Aug. 1998. *Evaluate instructional technology initiatives, short courses, and Option III MS programs.*
- Member, Dept. of ECE, Graduate ECE Admissions, Computer Engineering Curriculum Track Committee, Jan. 1997–Dec. 2006.
- Member, Dept. of ECE, Undergraduate Controls Curriculum Committee, Sep. 1996–Aug. 2001.

- Member, Dept. of ECE, Undergraduate Digital Systems Curriculum Committee, Sep. 1996–Aug. 2001.
- Member, Dept. of ECE, Undergraduate Software Engineering Curriculum Committee, Sep. 1996–Aug. 2001.

## Professional Activities

### *Outside Committee Assignments*

- Technical Program Committee, IEEE Vehicular Technology Conference Workshops, Spring 2018, Porto, Portugal.
- Technical Program Committee, 2016 International Conference on Energy and Smart Grid, Cappadocia, Turkey.
- General Chair, 2015 IEEE International Symposium on Power Line Communications and Its Applications, Austin, Texas USA
- Member, IEEE Communication Society Technical Committee on Power Line Communications, 2015–present
- Technical Program Committee, Data Flow Algorithms and Architecture for Signal Processing Systems Symposium, 2014 IEEE Global Signal and Information Processing Conference
- Technical Program Committee, Signal Processing for Communications Symposium, 2014 IEEE Global Communications Conference
- General Chair, Symposium on Software Defined and Cognitive Radios, 2013 IEEE Global Conference on Signal and Information Processing, Dec. 3-5, 2013, Austin, Texas USA
- Guest Co-Editor, *IEEE Transactions on Multimedia*, Special Issue on “New Software/Hardware Paradigms for Error-tolerant Multimedia Systems” published Dec. 2012
- Technical Program Committee, 2012 *IEEE Int. Conf. on Smart Grid Communications*
- Technical Program Co-Chair, IEEE International Workshop on Signal Processing Systems, Oct. 4-7, 2011, Beirut, Lebanon
- Design and Implementation of Signal Processing Systems Technical Committee Advisory Board, IEEE Signal Processing Society (2010–present)
- Associate Editor, *IEEE Transactions on Image Processing* (2007–2009 and 1998–2002). *Coordinated reviews for 83 submitted journal papers.*
- Associate Editor, *Journal of Signal Processing Systems*, (2007–present)
- Associate Editor, *IEEE Transactions on Signal Processing* (March 2005–March 2008). *Coordinated reviews for 57 submitted journal papers.*
- Design and Implementation of Signal Processing Systems Technical Committee, IEEE Signal Processing Society (1999–2009)
- Technical Program Committee, 2009 *IEEE Int. Conf. on Distributed Smart Cameras*

- Technical Program Committee, 2008 IEEE International Symposium on System-on-Chip
- Technical Program Committee, 2008 IEEE Global Communications Conference
- Technical Program Committee, 2008 IEEE International Conference on Image Processing
- Technical Program Committee, 2008 IEEE International Conference on Communications
- Technical Program Committee, 2007 IEEE International Conference on Signal Processing and Communication
- Technical Program Committee, 2007 IEEE International Conference on Acoustics, Speech, and Signal Processing
- Technical Program Committee, 2006 IEEE International Conference on Image Processing
- Technical Program Committee, 2006 IEEE International Conference on Acoustics, Speech, and Signal Processing
- Technical Program Committee, 2005 IEEE Global Communications Conference, Signal Processing for Communications Symposium
- Technical Program Committee, 2005 IEEE International Conference on Image Processing
- Technical Program Committee, 2005 IEEE International Conference on Acoustics, Speech, and Signal Processing
- Technical Advisory Board, 2005 Texas Instruments Developer's Conference
- Technical Program Co-Chair, 2004 IEEE Workshop on Signal Processing Systems
- Technical Program Co-Chair, 2004 IEEE Digital Signal Processing Workshop
- Technical Program Co-Chair, 2004 IEEE Signal Processing Education Workshop
- Technical Program Committee, 2004 IEEE Global Communications Conference, Signal Processing for Communications Symposium
- Technical Program Committee, 2004 IEEE International Conference on Acoustics, Speech, and Signal Processing
- Technical Advisory Board, 2004 Texas Instruments Developer's Conference
- Technical Program Committee, 2003 IEEE International Conference on Image Processing
- Technical Program Committee, 2003 IEEE International Conference on Acoustics, Speech, and Signal Processing
- Technical Program Committee, 2002 International Workshop on Digital and Computational Video
- Technical Program Committee, 2002 IEEE International Conference on Image Processing
- Technical Program Committee, 2002 International Conference on Compilers, Architecture, and Synthesis for Embedded Systems
- Technical Program Committee, 2002 IEEE Signal Processing Systems Workshop

- Technical Program Committee, 2002 IEEE International Conference on Acoustics, Speech, and Signal Processing
- General Chair, 2002 IEEE Southwest Symposium on Image Analysis and Interpretation
- Technical Program Committee, 2002 IEEE Southwest Symposium on Image Analysis and Interpretation
- Chair, Telecommunications Track, Texas Systems Day 2000
- Co-Chair, Curriculum Issues I Track, 2000 IEEE Signal Processing Education Workshop
- Technical Program Committee, 2000 IEEE International Conference on Acoustics, Speech, and Signal Processing
- Exhibits Co-Chair, 2000 IEEE International Conference on Image Processing
- Local Arrangements Chair, 2000 IEEE Southwest Symposium on Image Analysis and Interpretation
- Technical Program Committee, 1999 IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing
- Technical Program Committee, 1997 IEEE International Conference on Image Processing

#### *Other Activities*

- Advisory Boards
  - Provost's Advisory Board, American University of Beirut, Beirut, Lebanon (2017–2018)
  - Department of Electrical and Computer Engineering, American University of Beirut, Beirut, Lebanon (2013–present)
  - Department of Electrical and Computer Engineering, Rose-Hulman Institute of Technology, Terre Haute, IN USA (2010–2013)
- Reviewer for the following journals (in alphabetical order):
  - *EURASIP Journal on Applied Signal Processing* (2004–present)
  - *IEE Electronics Letters* (2004)
  - *IEEE Communication Letters* (2009, 2012)
  - *IEEE Signal Processing Letters* (1997–present)
  - *IEEE Transactions on Circuits and Systems* (1993–present)
  - *IEEE Transactions on Circuits and Systems for Video Technology* (1997–present)
  - *IEEE Transactions on Education* (1999)
  - *IEEE Transactions on Signal Processing* (1991–present)
  - *IEEE Transactions on Vehicular Technology* (2006–present)
  - *Proceedings of the IEEE* (2007)
- Reviewer for the following conferences (in alphabetical order):
  - *European Conf. on Parallel Processing*: 1997

- *IEEE Global Communications Conf.*: 2018, 2017, 2016, 2015, 2014, 2013, 2011, 2010, 2009, 2008, 2007, 2006, 2005, 2004
  - *IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*: 2017, 2016, 2015, 2014 2013, 2012, 2011, 2010, 2009, 2008, 2007, 2006, 2005, 2004, 2003, 2002, 2001, and 2000
  - *IEEE Int. Conf. on Communications*: 2018, 2017, 2012, 2011, 2010, 2009, 2008, 2007, 2006
  - *IEEE Int. Conf. on Distributed Smart Cameras*: 2009
  - *IEEE Int. Conf. on Image Processing*: 2016, 2015, 2014, 2012, 2011, 2010, 2009, 2008, 2007, 2006, 2005, 2004, 2003, 2002, 2011, 1997
  - *IEEE Int. Sym. on Circuits and Systems*: 2008, 2004, 2003
  - *IEEE Int. Sym. on Information Theory*: 2007
  - *IEEE/ACM Int. Sym. on Microarchitecture*: 2000
  - *IEEE Int. Sym. on Personal Indoor and Mobile Radio Communications*: 2005
  - *IEEE Int. Sym. on System-on a Chip*: 2009, 2008, 2007, 2006
  - *IEEE Int. Workshop on Signal Processing Systems*: 2017, 2013, 2011, 2010, 2009, 2008, 2007, 2005, 2004
  - IEEE Vehicular Technology Conference: 2018
- Chaired the following conference sessions:
  - “Signal Processing for Designs Under Power and Cost Constraints”, 2014 *IEEE Global Communications Conf.*
  - “Biomedical Systems Applications”, 2011 *IEEE Int. Workshop on Signal Processing Systems*
  - “Array Processing and Source Localization”, 2008 *Asilomar Conf. on Signals, Systems, and Computers*
  - “Integrated Algorithm and Architecture Implementation”, 2007 *Asilomar Conf. on Signals, Systems, and Computers*
  - “Hardware and Software Implementations of DSP Systems”, 2007 *IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*
  - “Signal Processing for MIMO Systems,” 2005 *IEEE Global Communications Conference*
  - “VLSI Communication Systems,” 2005 *Asilomar Conf. on Signals, Systems, and Computers*
  - “Signal Processing Algorithms,” 2004 *IEEE Global Communications Conference*
  - “Prototyping and Design,” 2004 *UT Austin Wireless Networking Symposium*
  - “Multicarrier Equalization for Wireline Communications,” 2002 *Asilomar Conf. on Signals, Systems, and Computers*
  - “Face Detection and Recognition,” 2001 *IEEE Int. Conf. on Image Processing*
  - “Filter Implementation,” 2001 *IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*
  - “Image Modeling,” 2000 *IEEE Int. Conf. on Image Processing*
  - “Image/Video Enhancement,” 1999 *IEEE Int. Conf. on Image Processing*
  - “System-Level Design Methods, Tools, and Case Studies”, 1998 *Asilomar Conf. on Signals, Systems, and Computers*
  - “Mapping Models of Computation to Architectures”, 1997 *IEEE Int. Conf. on Application Specific Systems, Architectures, and Processors*

- “Rapid Prototyping of Digital Signal Processing Systems”, *1996 Asilomar Conf. on Signals, Systems, and Computers*
- “DSP Education”, *1996 IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*
- “CAD for Design and Implementation of Signal Processing Systems”, *1994 Asilomar Conf. on Signals, Systems, and Computers*

## Publications

My Google citations for H-index calculation, citations by year, and papers sorted by citation count. Citation count is given below for papers with 60+ citations according to Google citations.

### *Refereed Journal and Magazine Articles*

1. F. B. Mismar, A. AlAmmouri, A. Alkhateeb, J. G. Andrews, and B. L. Evans, “Deep Learning Predictive Band Switching in Wireless Networks”, *IEEE Transactions on Wireless Communications*, submitted Oct. 2, 2019.
2. J. Sung, M. Sayed, M. Elgennedy, B. L. Evans, N. Al-Dhahir, I.-H. Kim, and K. Waheed, “Hybrid Powerline/Wireless Diversity for Smart Grid Communications: Design Challenges and Real-time Implementation”, *IEEE Wireless Communications Magazine*, submitted June 1, 2019.
3. J. Choi, J. Sung, N. Prasad, X.-F. Qi, B. L. Evans, and A. Gatherer, “Base Station Antenna Selection for Low-Resolution ADC Systems”, *IEEE Transactions on Communications*, 15 pages, accepted for publication, DOI 10.1109/TCOMM.2019.2963023.
4. F. B. Mismar, B. L. Evans, and A. Alkhateeb, “Deep Reinforcement Learning for 5G Networks: Joint Beamforming, Power Control, and Interference Coordination”, *IEEE Transactions on Communications*, 12 pages, accepted for publication, DOI 10.1109/TCOMM.2019.2961332.
5. F. B. Mismar, J. Choi, and B. L. Evans, “A Framework for Automated Cellular Network Tuning with Reinforcement Learning”, *IEEE Transactions on Communications*, vol. 67, no. 10, Oct. 2019, pp. 7152–7167, DOI 10.1109/TCOMM.2019.2926715.
6. F. B. Mismar and B. L. Evans, “Deep Learning in Downlink Coordinated Multipoint in New Radio Heterogeneous Networks”, *IEEE Wireless Communication Letters*, vol. 8, no. 4, Aug. 2019, pp. 1040–1043, DOI 10.1109/LWC.2019.2904686.
7. J. Choi, G. Lee, and B. L. Evans, “Two-Stage Analog Combining in Hybrid Beamforming Systems with Low-Resolution ADCs”, *IEEE Transactions on Signal Processing*, vol. 67, no. 9, May 1, 2019, pp. 2410–2425, DOI 10.1109/TSP.2019.2904931.
8. J. Choi, G. Lee, and B. L. Evans, “User Scheduling for Millimeter Wave Hybrid Beamforming Systems with Low-Resolution ADCs”, *IEEE Transactions on Wireless Communications*, vol. 18, no. 4, Apr. 2019, pp. 2401–2414, DOI 10.1109/TWC.2019.2904030.
9. J. Choi and B. L. Evans, “Analysis of Ergodic Rate for Transmit Antenna Selection in Low-Resolution ADC Systems”, *IEEE Transactions on Vehicular Technology*, vol. 68, no. 1, Jan. 2019, pp. 952–956, DOI 10.1109/TVT.2018.2878645.
10. K. D. Wesson, J. N. Gross, T. E. Humphreys, and B. L. Evans, “GNSS Signal Authentication via Power and Distortion Monitoring”, *IEEE Transactions on Aerospace and Electronic Systems*, vol. 54, no. 2, Apr. 2018, pp. 739–754, DOI 10.1109/TAES.2017.2765258.

11. D. Kundu, L. K. Choi, A. C. Bovik and B. L. Evans, “Perceptual Quality Evaluation of Synthetic Pictures Distorted by Compression and Transmission”, *Signal Processing: Image Communication*, vol. 61, Feb. 2018, pp. 54–72, DOI 10.1016/j.image.2017.11.004.
12. J. Choi, B. L. Evans and A. Gatherer, “Resolution-Adaptive Hybrid MIMO Architectures for Millimeter Wave Communications”, *IEEE Transactions on Signal Processing*, vol. 65, no. 23, pp. 6201–6216, Dec. 2017, DOI 10.1109/TSP.2017.2745440.
13. D. Kundu, D. Ghadiyaram, A. C. Bovik and B. L. Evans, “Large-scale Crowdsourced Study for Tone Mapped HDR Pictures”, *IEEE Transactions on Image Processing*, vol. 26, no. 10, pp. 4725–4740, Oct. 2017, DOI 10.1109/TIP.2017.2713945.
14. D. Kundu, D. Ghadiyaram, A. C. Bovik and B. L. Evans, “No-Reference Quality Assessment of Tone-Mapped HDR Pictures”, *IEEE Transactions on Image Processing*, vol. 26, no. 6, pp. 2957–2971, Jun. 2017, DOI 10.1109/TIP.2017.2685941.
15. C. Jia and B. L. Evans, “Online Motion Smoothing for Video Stabilization via Constrained Multiple-Model Estimation”, *EURASIP Journal on Image and Video Processing*, 13 pages, Mar. 27, 2017, DOI 10.1186/s13640-017-0171-8.
16. J. Choi, J. Park and B. L. Evans, “Spectral Efficiency Bounds for Interference-Limited SVD-MIMO Cellular Communication Systems”, *IEEE Wireless Communication Letters*, vol. 6, no. 1, pp. 46–49, Feb. 2017, DOI 10.1109/LWC.2016.2629474.
17. Y. Mortazavi, W. Jung, B. L. Evans, and A. Hassibi, “A Mostly-Digital PWM-Based Delta Sigma ADC with an Inherently Matched Multibit Quantizer/DAC”, *IEEE Transactions on Circuits and Systems II*, vol. 63, no. 11, pp. 1049–1053, Nov. 2016, DOI 10.1109/TCSII.2016.2538118.
18. J. Lin, T. Pande, I.-H. Kim, A. Batra and B. L. Evans, “Time-Frequency Modulation Diversity To Combat Periodic Impulsive Noise In Narrowband Powerline Communications”, *IEEE Transactions on Communications*, vol. 63, no. 5, pp. 1837–1849, May 2015, DOI: 10.1109/TCOMM.2015.2411601.
19. C. Jia and B. L. Evans, “Online Camera-Gyroscope Auto-Calibration for Cell Phones”, *IEEE Transactions on Image Processing*, vol. 23, no. 12, pp. 5070–5081, Dec. 2014.
20. C. Jia and B. L. Evans, “Constrained 3D Rotation Smoothing via Global Manifold Regression for Video Stabilization”, *IEEE Transactions on Signal Processing*, vol. 62, no. 13, pp. 3293–3304, Jul. 1, 2014.
21. M. Nassar, P. Schniter and B. L. Evans, “A Factor Graph Approach to Joint OFDM Channel Estimation and Decoding in Impulsive Noise Environments”, *IEEE Transactions on Signal Processing*, vol. 62, no. 6, pp. 1576–1589, Mar. 15, 2014.
22. J. Lin, M. Nassar, and B. L. Evans, “Impulsive Noise Mitigation in Powerline Communications using Sparse Bayesian Learning”, *IEEE Journal on Selected Areas in Communications*, vol. 31, no. 7, Jul. 2013, pp. 1172–1183. **171 citations**.
23. A. Chopra and B. L. Evans, “Outage Probability for Diversity Combining in Interference-Limited Channels”, *IEEE Transactions on Wireless Communications*, vol. 12, no. 2, pp. 550–560, Feb. 2013, DOI 10.1109/TWC.2012.121412.111704.

24. K. Gulati, B. L. Evans, and S. Srikanteswara, “Joint Temporal Statistics of Interference in Decentralized Wireless Networks”, *IEEE Transactions on Signal Processing*, vol. 60, no. 12, pp. 6713–6718, Dec. 2012.
25. K. Gulati, R. K. Ganti, J. G. Andrews, B. L. Evans, and S. Srikanteswara, “Characterizing Decentralized Wireless Networks with Temporal Correlation in the Low Outage Regime”, *IEEE Transactions on Wireless Communications*, vol. 11, no. 9, pp. 3112–3125, Sep. 2012.
26. M. Nassar, J. Lin, Y. Mortazavi, A. Dabak, I. H. Kim and B. L. Evans, “Local Utility Powerline Communications in the 3–500 kHz Band: Channel Impairments, Noise, and Standards”, *IEEE Signal Processing Magazine*, Special Issue on Signal Processing Techniques for the Smart Grid, vol. 29, no. 5, pp. 116–127, Sep. 2012. **174 citations**
27. A. Chopra and B. L. Evans, “Joint Statistics of Radio Frequency Interference in Multi-Antenna Receivers”, *IEEE Transactions on Signal Processing*, vol. 60, no. 7, Jul. 2012, pp. 3588–3603, DOI 10.1109/TSP.2012.2192431.
28. J. Lin, A. Gerstlauer and B. L. Evans, “Communication-Aware Heterogeneous Multiprocessor Mapping for Real-time Streaming Systems”, *Journal of Signal Processing Systems*, vol. 69, no. 3, May 19, 2012, pp. 279–291, DOI 10.1007/s11265-012-0674-6.
29. H. Rehman and B. L. Evans, “Alleviating Dirty-window-effect in Medium Frame-Rate Binary Video Halftones”, *IEEE Transactions on Image Processing*, vol. 21, no. 4, Apr. 2012, pp. 2022–2034.
30. A. Chopra and B. L. Evans, “Design of Sparse Filters for Channel Shortening”, *Journal of Signal Processing Systems*, Mar. 2012, vol. 66, no. 3, pp. 259–272.
31. M. Nassar, K. Gulati, M. R. DeYoung, B. L. Evans, and K. R. Tinsley, “Mitigating Near-Field Interference in Laptop Embedded Wireless Transceivers”, *Journal of Signal Processing Systems*, Apr. 2011, vol. 63, no. 1, pp. 1–12, invited paper. **84 citations**.
32. K. Gulati, B. L. Evans, J. G. Andrews, and K. R. Tinsley, “Statistics of Co-Channel Interference in a Field of Poisson and Poisson-Poisson Clustered Interferers”, *IEEE Transactions on Signal Processing*, vol. 58, no. 12, Dec. 2010, pp. 6207–6222. **162 citations**
33. H. Rehman and B. L. Evans, “A Framework for the Assessment of Temporal Artifacts in Medium Frame-rate Binary Video Halftones”, *EURASIP Journal on Image and Video Processing*, vol. 2010, Oct. 2010, 11 pages, Article ID 625191.
34. L. J. Karam, I. AlKamal, A. Gatherer, G. A. Frantz, D. V. Anderson and B. L. Evans, “Trends in Multicore DSP Platforms”, *IEEE Signal Processing Magazine*, Special Issue on Signal Processing on Platforms with Multiple Cores, vol. 26, no. 6, pp. 38–49, Nov. 2009. **158 citations**
35. I. C. Wong and B. L. Evans, “Optimal Resource Allocation in the OFDMA Downlink with Imperfect Channel Knowledge”, *IEEE Transactions on Communications*, vol. 57, no. 1, Jan. 2009, pp. 232–241. **171 citations**
36. I. C. Wong and B. L. Evans, “Sinusoidal Modeling and Adaptive Channel Prediction in Mobile OFDM Systems”, *IEEE Transactions on Signal Processing*, vol. 56, no. 4, Apr. 2008, pp. 1601–1615.
37. I. C. Wong and B. L. Evans, “Optimal Downlink OFDMA Resource Allocation with Linear Complexity to Maximize Ergodic Rates”, *IEEE Transactions on Wireless Communications*, vol. 7, no. 3, Mar. 2008, pp. 962–971. **210 citations**

38. S. Banerjee and B. L. Evans, “In-Camera Automation of Photographic Composition Rules”, *IEEE Transactions on Image Processing*, vol. 16, no. 7, Jul. 2007, pp. 1807–1820.
39. Z. Shen, R. Chen, J. G. Andrews, R. W. Heath, Jr., and B. L. Evans, “Sum Capacity of Multiuser MIMO Broadcast Channels with Block Diagonalization”, *IEEE Transactions on Wireless Communications*, vol. 6, no. 6, Jun. 2007, pp. 2040–2045. **196 citations**
40. R. Samanta, R. W. Heath, Jr., and B. L. Evans, “Joint Interference Cancellation and Channel Shortening in Multi-User MIMO Systems”, *IEEE Transactions on Vehicular Technology*, vol. 56, no. 2, Mar. 2007, pp. 652–660.
41. D. Arifler, G. de Veciana, and B. L. Evans, “A Factor Analytic Approach to Inferring Congestion Sharing Based on Flow Level Measurements”, *IEEE/ACM Transactions on Networking*, vol. 15, no. 1, Feb. 2007, pp. 67–79.
42. V. Monga, N. Damera-Venkata, and B. L. Evans, “Design of Tone Dependent Color Error Diffusion Halftoning Systems”, *IEEE Transactions on Image Processing*, vol. 16, no. 1, Jan. 2007, pp. 198–211.
43. V. Monga and B. L. Evans, “Perceptual Image Hashing Via Feature Points: Performance Evaluation and Trade-Offs”, *IEEE Transactions on Image Processing*, vol. 15, no. 11, pp. 3452–3465, Nov. 2006. **299 citations**
44. Z. Shen, R. Chen, J. G. Andrews, R. W. Heath, Jr., and B. L. Evans, “Low Complexity User Selection Algorithms for Multiuser MIMO Systems with Block Diagonalization”, *IEEE Transactions on Signal Processing*, vol. 54, no. 9, pp. 3658–3663, Sep. 2006. **558 citations**
45. R. K. Martin, K. Vanbleu, M. Ding, G. Ysebaert, M. Milosevic, B. L. Evans, M. Moonen, and C. R. Johnson, Jr., “Implementation Complexity and Communication Performance Tradeoffs in Discrete Multitone Modulation Equalizers”, *IEEE Transactions on Signal Processing*, vol. 54, no. 8, pp. 3216–3230, Aug. 2006. Listed on the IEEE Communication Society Best Readings on “Broadband Access: Digital Subscriber Line”.
46. Z. Shen, J. G. Andrews, and B. L. Evans, “Sum Capacity of MIMO Gaussian Broadcast Channels with Channel Frobenius Norm Constraints”, *IEEE Communication Letters*, vol. 10, no. 6, pp. 471–473, June 2006.
47. Z. Shen, R. W. Heath, Jr., J. G. Andrews, and B. L. Evans, “Space-Time Water-filling for Composite MIMO Fading Channels”, *EURASIP Journal on Wireless Communications and Networking*, special issue on Radio Resource Management in 3G+ Systems, vol. 2006, special issue no. 6, 8 pages, Article Id 16281, May 2006.
48. G. Arslan, B. Lu, L. D. Clark, and B. L. Evans, “Iterative Refinement Methods for Time Domain Equalizer Design”, *EURASIP Journal on Applied Signal Processing*, special issue on Advanced Signal Processing for Digital Subscriber Lines, vol. 2006, special issue no. 7, 12 pages, Article Id 43154, Apr. 2006.
49. K. Han and B. L. Evans, “Optimum Wordlength Search Using Sensitivity Information”, *EURASIP Journal on Applied Signal Processing*, special issue on Design Methods for DSP Systems, vol. 2006, special issue no. 5, 14 pages, Article Id 92849, Mar. 2006.
50. V. Monga, A. Banerjee, and B. L. Evans, “A Clustering Based Approach to Perceptual Image Hashing”, *IEEE Transactions on Information Forensics and Security*, vol. 1, no. 1, pp. 68–79, Mar. 2006. **128 citations**

51. K. Sato, B. L. Evans, and J. K. Aggarwal, “Designing an Embedded Video Processing Camera using a 16-bit Microprocessor for a Surveillance System”, *Journal of VLSI Signal Processing*, vol. 42, no. 1, pp. 57–68, Jan. 2006.
52. W. Schwartzkopf, A. C. Bovik, and B. L. Evans, “Maximum-Likelihood Techniques for Joint Segmentation-Classification of Multi-spectral Chromosome Images”, *IEEE Transactions on Medical Imaging*, vol. 24, no. 12, pp. 1593–1610, Dec. 2005. **95 citations**
53. N. Damera-Venkata, J. Yen, V. Monga, and B. L. Evans, “Hercopy Image Barcodes Via Block Error Diffusion”, *IEEE Transactions on Image Processing*, vol. 14, no. 12, pp. 1977–1989, Dec. 2005.
54. Z. Shen, J. G. Andrews, and B. L. Evans, “Adaptive Resource Allocation in Multiuser OFDM Systems with Proportional Rate Constraints”, *IEEE Transactions on Wireless Communications*, vol. 4, no. 6, pp. 2726–2737, Nov. 2005. **1256 citations**
55. R. K. Martin, K. Vanbleu, M. Ding, G. Ysebaert, M. Milosevic, B. L. Evans, M. Moonen, and C. R. Johnson, Jr., “Unification and Evaluation of Equalization Structures and Design Algorithms for Discrete Multitone Modulation Systems”, *IEEE Transactions on Signal Processing*, vol. 53, no. 10, pp. 3880–3894, Oct. 2005. **133 citations**. Listed on the IEEE Communication Society Best Readings on “Broadband Access: Digital Subscriber Line”.
56. R. K. Martin, M. Ding, B. L. Evans, and C. R. Johnson, Jr., “Infinite Length Results and Design Implications for Time-Domain Equalizers”, *IEEE Transactions on Signal Processing*, vol. 52, no. 1, pp. 297–301, Jan. 2004.
57. R. K. Martin, M. Ding, B. L. Evans, and C. R. Johnson, Jr., “Efficient Channel Shortening Equalizer Design”, *EURASIP Journal on Applied Signal Processing*, vol. 2003, no. 13, pp. 1279–1290, Dec. 1, 2003.
58. N. Damera-Venkata, B. L. Evans, and V. Monga, “Color Error Diffusion Halftoning”, *IEEE Signal Processing Magazine*, vol. 20, no. 4, pp. 51–58, July 2003, invited paper.
59. M. Milosevic, T. Inoue, P. Molnar, and B. L. Evans, “Fast Unbiased Echo Canceller Update During ADSL Transmission”, *IEEE Transactions on Communications*, vol. 51, no. 4, pp. 561–565, Apr. 2003.
60. V. Monga, W. S. Geisler, and B. L. Evans, ”Linear, Color Separable, Human Visual System Models for Vector Error Diffusion Halftoning”, *IEEE Signal Processing Letters*, vol. 10, no. 4, pp. 93–97, Apr. 2003.
61. H. R. Sheikh, B. L. Evans, and A. C. Bovik, “Real-Time Foveation Techniques for Low Bit Rate Video Coding”, *Journal of Real-Time Imaging*, vol. 9, no. 1, pp. 27–40, Feb. 2003.
62. G. Arslan, B. L. Evans, and S. Kiaei, “Equalization for Discrete Multitone Receivers To Maximize Bit Rate”, *IEEE Transactions on Signal Processing*, vol. 49, no. 12, pp. 3123–3135, Dec. 2001. **296 citations**
63. K. C. Slatton, M. M. Crawford, and B. L. Evans, “Fusing Interferometric Radar and Laser Altimeter Data to Estimate Surface Topography and Vegetation Heights”, *IEEE Transactions on Geoscience and Remote Sensing*, vol. 39, no. 11, pp. 2470–2482, Nov. 2001. **77 citations**
64. N. Damera-Venkata and B. L. Evans, “Design and Analysis of Vector Color Error Diffusion Halftoning Systems”, *IEEE Transactions on Image Processing*, vol. 10, no. 10, pp. 1552–1565, Oct. 2001.

65. N. Damera-Venkata and B. L. Evans, “Adaptive Threshold Modulation for Error Diffusion Halftoning”, *IEEE Transactions on Image Processing*, vol. 10, no. 1, pp. 104–116, Jan. 2001. **97 citations**
66. T. D. Kite, N. Damera-Venkata, B. L. Evans, and A. C. Bovik, “A Fast, High-Quality Inverse Halftoning Algorithm for Error Diffused Halftones”, *IEEE Transactions on Image Processing*, vol. 9, no. 9, pp. 1583–1592, Sep. 2000. **117 citations**
67. J. I. Kim, A. C. Bovik, and B. L. Evans, “Generalized Predictive Binary Shape Coding Using Polygon Approximations”, *Signal Processing: Image Communication*, vol. 15, no. 7–8, pp. 643–663, May 2000.
68. N. Damera-Venkata, B. L. Evans, and S. R. McCaslin, “Design of Optimal Minimum Phase Digital FIR Filters Using Discrete Hilbert Transforms”, *IEEE Transactions on Signal Processing*, vol. 48, no. 5, pp. 1491–1495, May 2000.
69. T. D. Kite, B. L. Evans, and A. C. Bovik, “Modeling and Quality Assessment of Halftoning by Error Diffusion”, *IEEE Transactions on Image Processing*, vol. 9, no. 4, pp. 909–922, May 2000. **130 citations**
70. N. Damera-Venkata, T. D. Kite, W. S. Geisler, B. L. Evans, and A. C. Bovik, “Image Quality Assessment Based on a Degradation Model”, *IEEE Transactions on Image Processing*, vol. 9, no. 4, pp. 636–650, Apr. 2000. **805 citations**
71. A. A. Deosthali, S. R. McCaslin, and B. L. Evans, “A Low-Complexity ITU-Compliant Dual Tone Multiple Frequency Detector”, *IEEE Transactions on Signal Processing*, vol. 48, no. 3, pp. 911–916, Mar. 2000.
72. G. E. Allen and B. L. Evans, “Real-Time Sonar Beamforming on Workstations Using Process Networks and POSIX Threads”, *IEEE Transactions on Signal Processing*, vol. 48, no. 3, pp. 921–926, Mar. 2000.
73. N. Damera-Venkata and B. L. Evans, “An Automated Framework for Multicriteria Optimization of Analog Filter Designs”, *IEEE Transactions on Circuits and Systems II: Analog and Digital Signal Processing*, vol. 46, no. 8, pp. 981–990, Aug. 1999.
74. M. D. Felder, J. C. Mason, and B. L. Evans, “Efficient Dual-Tone Multifrequency Detection Using the Nonuniform Discrete Fourier Transform”, *IEEE Signal Processing Letters*, vol. 5, no. 7, pp. 160–163, Jul. 1998. **84 citations**
75. N. Damera-Venkata, S. Gummadi, and B. L. Evans, “Comments on ‘Description of FIR Digital Filters in the form of Parallel Connection of Linear Phase FIRs’ ”, *IEE Electronics Letters*, vol. 34, no. 9, pp. 866–867, Apr. 30, 1998.
76. M. Torlak, G. Xu, B. L. Evans, and H. Liu, “Fast Estimation of Weight Vectors to Optimize Multi-Transmitter Broadcast Channel Capacity”, *IEEE Transactions on Signal Processing*, vol. 46, no. 1, pp. 243–246, Jan. 1998.
77. H.-T. Pai, A. C. Bovik, and B. L. Evans, “Multi-Channel Blind Image Restoration”, *TUBITAK Elektrik Journal of Electrical Engineering and Computer Sciences*, vol. 5, no. 1, pp. 79–97, Fall 1997.
78. B. L. Evans, “Designing Commutative Cascades of Multidimensional Upsamplers and Downsamplers”, *IEEE Signal Processing Letters*, vol. 4, no. 11, pp. 313–316, Nov. 1997.

79. D. Wei, B. L. Evans, and A. C. Bovik, "Loss of Perfect Reconstruction in Multidimensional Filter-banks and Wavelets Designed via Extended McClellan Transformations", *IEEE Signal Processing Letters*, vol. 4, no. 10, pp. 295–297, Oct. 1997.
80. B. L. Evans, R. H. Bamberger, and J. H. McClellan, "Rules for Multidimensional Multirate Structures", *IEEE Transactions on Signal Processing*, vol. 42, no. 4, pp. 762–771, Apr. 1994.
81. B. L. Evans, T. R. Gardos, and J. H. McClellan, "Imposing Structure on Smith-Form Decompositions of Rational Resampling Matrices", *IEEE Transactions on Signal Processing*, vol. 42, no. 4, pp. 970–973, Apr. 1994.
82. B. L. Evans, L. J. Karam, K. A. West, and J. H. McClellan, "Learning Signals and Systems with Mathematica", *IEEE Transactions on Education*, vol. 36, no. 1, pp. 72–78, Feb. 1993.
83. B. L. Evans, J. H. McClellan, and W. B. McClure, "Symbolic Transforms with Applications to Signal Processing", *The Mathematica Journal*, vol. 1, no. 2, pp. 70–80, Fall, 1990.

#### *Refereed Conference Papers*

1. J. Sung and B. L. Evans, "Hybrid Beamformer Codebook Design and Ordering for Compressive mmWave Channel Estimation", *Proc. IEEE International Conference on Computing, Networking and Communications*, Feb. 17–20, 2020, Big Island, Hawaii, USA.
2. J. Sung and B. L. Evans, "Versatile Compressive mmWave Hybrid Beamformer Codebook Design Framework", *Proc. IEEE International Conference on Computing, Networking and Communications*, Feb. 17–20, 2020, Big Island, Hawaii, USA.
3. J. Choi, Y. Cho, B. L. Evans, and A. Gatherer, "Robust Learning-Based ML Detection for Massive MIMO Systems with One-Bit Quantized Signals", *Proc. IEEE Global Communications Conf.*, Dec. 9–13, 2019, Waikoloa, HI, USA.
4. J. Choi, G. Lee, and B. L. Evans, "A Hybrid Beamforming Receiver with Two-Stage Analog Combining and Low-Resolution ADCs", *Proc. IEEE Int. Conf. on Communications*, May 20–24, 2019, Shanghai, China, 6 pages.
5. F. B. Mismar and B. L. Evans, "Deep Q-Learning for Self-Organizing Networks Fault Management and Radio Performance Improvement", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 28–31, 2018, Pacific Grove, CA, USA, 5 pages.
6. F. B. Mismar and B. L. Evans, "Q-Learning Algorithm for VoLTE Closed-Loop Power Control in Indoor Small Cells", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 28–31, 2018, Pacific Grove, CA, USA, 5 pages.
7. J. Choi and B. L. Evans, "User Scheduling for Millimeter Wave MIMO Communications with Low-Resolution ADCs", *Proc. IEEE Int. Conf. on Communications*, May 20–24, 2018, Kansas City, MO, USA, 6 pages.
8. F. B. Mismar and B. L. Evans, "Partially Blind Handovers for mmWave New Radio Aided by Sub-6 GHz LTE Signaling", *Proc. IEEE Int. Conf. on Communications Work. Evolutional Tech. & Ecosystems for 5G Phase II*, May 20–24, 2018, Kansas City, MO, USA, 5 pages.
9. J. Sung and B. L. Evans, "Real-Time Testbed for Diversity in Powerline and Wireless Smart Grid Communications", *Proc. IEEE Int. Conf. on Communications Work. Integrating Comm., Control, Comp. Tech. for Smart Grid*, May 20–24, 2018, Kansas City, MO, USA, 6 pages.

10. J. Choi, J. Sung, B. L. Evans, and A. Gatherer, "Antenna Selection for Large-Scale MIMO Systems with Low-Resolution ADCs", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Apr. 15–20, 2018, Calgary, Alberta, Canada, 5 pages.
11. J. Sung, J. Choi, and B. L. Evans, "Narrowband Channel Estimation for Hybrid Beamforming Millimeter Wave Communication Systems with One-Bit Quantization", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Apr. 15–20, 2018, Calgary, Alberta, Canada, 5 pages.
12. J. Choi, J. Sung, B. L. Evans, and A. Gatherer, "ADC Bit Optimization for Spectrum- and Energy-Efficient Millimeter Wave Communications", *Proc. IEEE Global Communications Conf.*, Dec. 4–8, 2017, Singapore, 6 pages.
13. Y. F. Choo, B. L. Evans, and A. Gatherer, "Complex Block Floating-Point Format with Box Encoding For Wordlength Reduction in Communication Systems", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 30–Nov. 3, 2017, Pacific Grove, CA USA, 5 pages.
14. J. Choi, B. L. Evans, and A. Gatherer, "ADC Bit Allocation Under a Power Constraint for mmWave Massive MIMO Communication Receivers", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Mar. 5–9, 2017, New Orleans, LA USA, 5 pages.
15. D. Kundu, Deepti Ghadiyaram, A. C. Bovik and B. L. Evans, "No-reference Image Quality Assessment for High Dynamic Range Images", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 6–9, 2016, Pacific Grove, CA USA, 6 pages.
16. D. Kundu and B. L. Evans, "Visual Attention guided Quality Assessment of Tone-Mapped Images using Scene Statistics", *Proc. IEEE Int. Conf. on Image Processing*, Sep. 25–28, 2016, Phoenix, Arizona USA, 5 pages.
17. J. Choi, B. L. Evans and A. Gatherer, "Space-Time Fronthaul Compression of Complex Baseband Uplink LTE Signals", *Proc. IEEE Int. Conf. on Communications*, May 23–27, 2016, Kuala Lumpur, Malaysia, 6 pages.
18. D. Kundu and B. L. Evans, "No-reference Synthetic Image Quality Assessment using Scene Statistics", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 8–11, 2015, Pacific Grove, CA USA, 5 pages.
19. M. Sayed, G. Sebaali, B. L. Evans and N. Al-Dhahir, "Efficient Diversity Technique for Hybrid Narrowband-Powerline/Wireless Smart Grid Communications", *Proc. IEEE Smart Grid Communications*, Nov. 2–5, 2015, Miami, FL USA, 6 pages.
20. D. Kundu and B. L. Evans, "Full-Reference Visual Quality Assessment for Synthetic Images: A Subjective Study", *Proc. IEEE Int. Conf. on Image Processing*, Sep. 27–30, 2015, Quebec City, Canada, 5 pages. **Won Top 10% Paper Award**.
21. J. Lin, T. Pande, I.-H. Kim, A. Batra and B. L. Evans, "Robust Transceiver to Combat Periodic Impulsive Noise in Narrowband Powerline Communications", *Proc. IEEE Int. Conf. on Communications*, June 8–12, 2015, London, UK, 6 pages.
22. G. Sebaali and B. L. Evans, "Design Tradeoffs in Joint Powerline and Wireless Transmission for Smart Grid Communications", *Proc. IEEE Int. Sym. on Power Line Communications and Its Applications*, Mar. 29–Apr. 1, 2015, Austin, TX USA, 6 pages.

23. L. S. Wong, G. E. Allen and B. L. Evans, “Sonar Data Compression using Non-Uniform Quantization and Noise Shaping”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 2–5, 2014, Pacific Grove, CA USA, 5 pages.
24. C. Jia, Z. Sinno and B. L. Evans, “Real-Time 3D Rotation Smoothing for Video Stabilization”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 2–5, 2014, pp. 673–677, Pacific Grove, CA USA, 5 pages.
25. D. Kundu and B. L. Evans, “Spatial Domain Synthetic Scene Statistics”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 2–5, 2014, pp. 948–954, Pacific Grove, CA USA, 5 pages.
26. W. Jung, Y. Mortazavi, B. L. Evans and A. Hassibi, “An All-Digital PWM-Based Delta Sigma ADC with an Inherently Matched Multi-bit Quantizer”, *Proc. IEEE Custom Integrated Circuits Conf.*, Sep. 15–17, 2014, San Jose, CA USA, 4 pages.
27. A. Chopra, W. Reid and B. L. Evans, “Low Complexity Subband Analysis using Quadrature Mirror Filters”, *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, May 4–9, 2014, Florence, Italy, 5 pages.
28. J. Lin and B. L. Evans, “Non-parametric Mitigation of Periodic Impulsive Noise in Narrowband Powerline Communications”, *Proc. IEEE Global Communications Conf.*, Dec. 9–12, 2013, pp. 2981–2986, Atlanta, GA USA.
29. C. Jia and B. L. Evans, “Online Calibration and Synchronization of Cellphone Camera and Gyroscope”, *Proc. IEEE Global Conf. on Signal and Information Processing*, Dec. 3–5, 2013, pp. 731–734, Austin, TX USA.
30. K. F. Nieman and B. L. Evans, “Time-Domain Compression of Complex-Baseband LTE Signals for Cloud Radio Access Networks”, *Proc. IEEE Global Conf. on Signal and Information Processing*, Dec. 3–5, 2013, pp. 1198–1201, Austin, TX USA.
31. K. D. Wesson, B. L. Evans and T. E. Humphreys, “A Combined Symmetric Difference and Power Monitoring GNSS Anti-Spoofing Technique”, *Proc. IEEE Global Conf. on Signal and Information Processing*, Dec. 3–5, 2013, pp. 217–220, Austin, TX USA.
32. K. D. Wesson, B. L. Evans and T. E. Humphreys, “A Probabilistic Framework for Global Navigation Satellite Signal Timing Assurance”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 3–6, 2013, Pacific Grove, CA.
33. M. Nassar, P. Schniter and B. L. Evans, “A Factor-Graph Approach to Joint OFDM Channel Estimation and Decoding in Impulsive Noise Channels”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 3–6, 2013, Pacific Grove, CA.
34. K. F. Nieman, M. Nassar, J. Lin and B. L. Evans, “FPGA Implementation of a Message-Passing OFDM Receiver for Impulsive Noise Channels”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 3–6, 2013, Pacific Grove, CA. **Won Best Student Paper Award for the Architecture and Implementation Track, Placed Second for the Overall Student Best Paper Award.**
35. C. Jia and B. L. Evans, “3D Rotational Video Stabilization Using Manifold Optimization”, *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, May 26–31, 2013, Vancouver, Canada.

36. K. F. Nieman, J. Lin, M. Nassar, B. L. Evans, and K. Waheed, "Cyclic Spectral Analysis of Power Line Noise in the 3-200 kHz Band", *Proc. IEEE Int. Sym. on Power Line Communications and Its Applications*, Mar. 24–27, 2013, Johannesburg, South Africa. **Won the Best Paper Award.**
37. H. Andrade, A. Ghosal, K. Ravindran and B. L. Evans, "A Methodology for the Design of Reliable Systems on Heterogeneous Multi-Target Platforms", *Proc. Int. Conf. on ReConfigurable Computing and FPGAs*, Dec. 5–7, 2012, Cancun, Mexico.
38. J. Lin and B. L. Evans, "Cyclostationary Noise Mitigation in Narrowband Powerline Communications", *Proc. APSIPA Annual Summit and Conference*, Dec. 3–6, 2012, Hollywood, CA USA, invited paper.
39. C. Jia and B. L. Evans, "Probabilistic 3-D Motion Estimation for Rolling Shutter Video Rectification from Visual and Inertial Measurements", *Proc. IEEE Int. Workshop on Multimedia Signal Processing*, Sep. 17–20, 2012, Banff, Canada. **Won Top 10% Paper Award.**
40. M. Park, M. Nassar, B. L. Evans, and H. Vikalo, "Adaptive Experimental Design for Drug Combinations", *Proc. IEEE Statistical Signal Processing Workshop*, Aug. 5–8, 2012, Ann Arbor, MI USA.
41. M. Nassar, A. Dabak, I. H. Kim, T. Pande and B. L. Evans, "Cyclostationary Noise Modeling In Narrowband Powerline Communication For Smart Grid Applications", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Mar. 25–30, 2012, Kyoto, Japan. **104 citations. This paper's model of noise/interference for powerline communications in the 3-500 kHz band was adopted by the IEEE 1901.2 powerline communications standard.**
42. M. Nassar, K. Gulati, Y. Mortazavi, and B. L. Evans, "Statistical Modeling of Asynchronous Impulsive Noise in Powerline Communication Networks", *Proc. IEEE Global Communications Conf.*, Dec. 5–9, 2011, Houston, TX USA. **67 citations.**
43. J. Lin, M. Nassar, and B. L. Evans, "Non-Parametric Impulsive Noise Mitigation in OFDM Systems Using Sparse Bayesian Learning", *Proc. IEEE Global Communications Conf.*, Dec. 5–9, 2011, Houston, TX USA.
44. M. Nassar and B. L. Evans, "Low Complexity EM-based Decoding for OFDM Systems with Impulsive Noise", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 6–9, 2011, Pacific Grove, CA USA.
45. C. Jia and B. L. Evans, "Patch-based Image Deconvolution Via Joint Modeling Of Sparse Priors", *Proc. IEEE Int. Conf. on Image Processing*, Sep. 11–14, 2011, Brussels, Belgium.
46. M. Nassar, X. E. Lin and B. L. Evans, "Stochastic Modeling of Microwave Oven Interference in WLANs", *Proc. IEEE Int. Conf. on Communications*, Jun. 5–9, 2011, Kyoto, Japan.
47. J. Lin, A. Srivatsa, A. Gerstlauer and B. L. Evans, "Heterogeneous Multiprocessor Mapping for Real-time Streaming Systems", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, May 22–27, 2011, Prague, Czech Republic.
48. J. F. Bridgman, G. E. Allen, and B. L. Evans "Scalable Multi-core Sonar Beamforming with Computational Process Networks", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 7–10, 2010, Pacific Grove, CA USA.

49. K. A. Perrine, K. F. Nieman, T. L. Henderson, K. H. Lent, T. J. Brudner and B. L. Evans, "Doppler Estimation and Correction for Shallow Underwater Acoustic Communications", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 7–10, 2010, Pacific Grove, CA USA.
50. K. F. Nieman, K. A. Perrine, K. H. Lent, T. L. Henderson, T. J. Brudner and B. L. Evans, "Multi-stage And Sparse Equalizer Design For Communication Systems In Reverberant Underwater Channels", *Proc. IEEE Int. Workshop on Signal Processing Systems*, Oct. 6–8, 2010, Cupertino, CA USA.
51. K. F. Nieman, K. A. Perrine, T. L. Henderson, K. H. Lent, T. J. Brudner and B. L. Evans, "Wideband Monopulse Spatial Filtering for Large Array Receivers for Reverberant Underwater Communication Channels", *Proc. IEEE OCEANS*, Sep. 20–23, 2010 Seattle, Washington USA.
52. H. Rehman and B. L. Evans, "Flicker Assessment of Low-to-Medium Frame-rate Binary Video Halftones", *Proc. IEEE Southwest Symposium on Image Analysis and Interpretation*, May 23–25, 2010, Austin, Texas USA, invited paper.
53. K. Gulati, B. L. Evans, and K. R. Tinsley, "Statistical Modeling of Co-Channel Interference in a Field of Poisson Distributed Interferers", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Mar. 14–19, 2010, Dallas, Texas USA.
54. A. Chopra and B. L. Evans, "Design of Sparse Filters for Channel Shortening", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Mar. 14–19, 2010, Dallas, Texas USA.
55. K. Gulati, A. Chopra, B. L. Evans, and K. R. Tinsley, "Statistical Modeling of Co-Channel Interference", *Proc. IEEE Global Communications Conf.*, Nov. 30–Dec. 4, 2009, Honolulu, Hawaii.
56. A. Chopra, K. Gulati, B. L. Evans, K. R. Tinsley, and C. Sreerama, "Performance Bounds of MIMO Receivers in the Presence of Radio Frequency Interference", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Apr. 19–24, 2009, Taipei, Taiwan.
57. M. R. DeYoung, R. W. Heath, Jr., and B. L. Evans, "Using Higher Order Cyclostationarity to Identify Space-Time Block Codes", *Proc. IEEE Global Communications Conf.*, Nov. 30–Dec. 4th, 2008, New Orleans, LA USA.
58. K. Gulati, A. Chopra, R. W. Heath, Jr., B. L. Evans, K. R. Tinsley, and X. E. Lin, "MIMO Receiver Design in the Presence of Radio Frequency Interference", *Proc. IEEE Global Communications Conf.*, Nov. 30–Dec. 4th, 2008, New Orleans, LA USA.
59. B. Stein, Y. You, T. J. Brudner and B. L. Evans, "Advanced Sonar Processing Techniques for Underwater Acoustic Multi-Input Multi-Output Communications", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 26–29, 2008, Pacific Grove, CA USA.
60. I. C. Wong and B. L. Evans, "Adaptive Downlink OFDMA Resource Allocation", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 26–29, 2008, Pacific Grove, CA USA, invited paper.
61. M. Nassar, K. Gulati, A. K. Sujeeth, N. Aghasadeghi, B. L. Evans, and K. R. Tinsley, "Mitigating Near-Field Interference in Laptop Embedded Wireless Transceivers", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Mar. 30–Apr. 4, 2008, Las Vegas, NV USA.
62. I. C. Wong and B. L. Evans, "Optimal Downlink OFDMA Subcarrier, Rate, and Power Allocation with Linear Complexity to Maximize Ergodic Weighted-Sum Rates", *Proc. IEEE Global Communications Conf.*, Nov. 26–30, 2007, Washington, DC USA.

63. I. C. Wong and B. L. Evans, "OFDMA Resource Allocation for Ergodic Capacity Maximization with Imperfect Channel Knowledge", *Proc. IEEE Global Communications Conf.*, Nov. 26–30, 2007, Washington, DC USA.
64. A. G. Olson, A. Chopra, Y. Mortazavi, I. C. Wong, and B. L. Evans, "Real-Time MIMO Discrete Multitone Transceiver Testbed", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 4–7, 2007, Pacific Grove, CA USA. **Won Best Student Paper Award for the Architecture and Implementation Track.**
65. M. R. DeYoung and B. L. Evans, "Blind Source Separation with a Time-Varying Mixing Matrix", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 4–7, 2007, Pacific Grove, CA USA.
66. I. C. Wong and B. L. Evans, "Optimal OFDMA Resource Allocation with Linear Complexity to Maximize Ergodic Weighted Sum Capacity", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Apr. 16–20, 2007, vol. II, pp. 601–604, Honolulu, HI USA.
67. I. C. Wong and B. L. Evans, "Optimal OFDMA Subcarrier, Rate, and Power Allocation for Ergodic Rates Maximization with Imperfect Channel Knowledge", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Apr. 16–20, 2007, vol. II, pp. 89–92, Honolulu, HI USA.
68. G. E. Allen, P. E. Zucknick and B. L. Evans, "A Distributed Deadlock Detection and Resolution Algorithm for Process Networks", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Apr. 16–20, 2007, vol. II, pp. 33–36, Honolulu, HI USA.
69. I. C. Wong and B. L. Evans, "Exploiting Spatio-Temporal Correlations in MIMO Wireless Channel Prediction", *Proc. IEEE Global Communications Conf.*, Nov. 2006, San Francisco, CA USA.
70. I. C. Wong and B. L. Evans, "Low-Complexity Adaptive High-Resolution Channel Prediction for OFDM Systems", *Proc. IEEE Global Communications Conf.*, Nov. 2006, San Francisco, CA USA.
71. D. Wang and B. L. Evans, "Codebook Design for Noncoherent MIMO Communications Via Reflection Matrices", *Proc. IEEE Global Communications Conf.*, Nov. 2006, San Francisco, CA USA.
72. G. E. Allen, P. E. Zucknick and B. L. Evans, "Zero-copy Queues for Native Signal Processing Using the Virtual Memory System", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 2006, pp. 1188–1191, Pacific Grove, CA USA.
73. K. Han, A. G. Olson, and B. L. Evans, "Automatic floating-point to fixed-point transformations", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 2006, pp. 79–83, Pacific Grove, CA USA, invited paper.
74. Z. Shen, R. Chen, J. G. Andrews, R. W. Heath, Jr., and B. L. Evans, "Sum Capacity of Multiuser MIMO Broadcast Channels with Block Diagonalization", *Proc. IEEE Int. Symposium on Information Theory*, July 9–14, 2006, pp. 886–890, Seattle, WA USA.
75. Z. Shen, J. G. Andrews, and B. L. Evans, "Upper Bounds on MIMO Channel Capacity with Channel Frobenius Norm Constraints", *Proc. IEEE Global Communications Conf.*, Nov. 28–Dec. 2, 2005, pp. 1505–1509, St. Louis, MO USA.
76. I. C. Wong and B. L. Evans, "Joint Channel Estimation and Prediction for OFDM Systems", *Proc. IEEE Global Communications Conf.*, Nov. 28–Dec. 2, 2005, pp. 2255–2259, St. Louis, MO USA.

77. Z. Shen, R. Chen, J. G. Andrews, R. W. Heath, Jr., and B. L. Evans, “Low Complexity User Selection Algorithms for Multiuser MIMO Systems with Block Diagonalization”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 30–Nov. 2, 2005, pp. 628–632, Pacific Grove, CA USA.
78. I. C. Wong and B. L. Evans, “Performance Bounds in OFDM Channel Prediction”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 30–Nov. 2, 2005, pp. 1461–1465, Pacific Grove, CA USA.
79. K. Han, B. L. Evans, and E. E. Swartzlander, Jr., “Low-Power Multipliers with Data Wordlength Reduction”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 30–Nov. 2, 2005, pp. 1615–1619, Pacific Grove, CA USA.
80. T. R. Coffman, B. L. Evans, and A. C. Bovik, “Halftoning-Inspired Methods for Foveation in Variable-Acuity Superpixel Imager (VASI) Cameras”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 30–Nov. 2, 2005, pp. 1655–1659, Pacific Grove, CA USA.
81. D. Arifler and B. L. Evans, “Factor Analysis of Network Flow Throughput Measurements for Inferring Congestion Sharing”, *Proc. European Signal Processing Conf.*, Sep. 4–8, 2005, Antalya, Turkey.
82. V. Monga, D. Vats, and B. L. Evans, “Image Authentication Under Geometric Attacks Via Structure Matching”, *Proc. IEEE Int. Conf. on Multimedia and Expo*, July 6–8, 2005, pp. 229–232, Amsterdam, The Netherlands.
83. A. G. Olson and B. L. Evans, “Deadlock Detection for Distributed Process Networks”, *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Mar. 19–23, 2005, vol. 5, pp. 73–76, Philadelphia, PA USA.
84. M. Ding, Z. Shen, and B. L. Evans, “An Achievable Performance Upper Bound for Discrete Multitone Equalization”, *Proc. IEEE Global Communications Conf.*, Nov. 29–Dec. 3, 2004, pp. 2297–2301, Dallas, TX USA.
85. Z. Shen, R. W. Heath, Jr., J. G. Andrews, and B. L. Evans, “Comparison of Space-Time Water-filling and Spatial Water-filling for MIMO Fading Channels”, *Proc. IEEE Global Communications Conf.*, Nov. 29–Dec. 3, 2004, pp. 431–435, Dallas, TX USA.
86. I. C. Wong, A. Forenza, R. W. Heath, Jr., and B. L. Evans, “Long Range Channel Prediction for Adaptive OFDM Systems”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 7–10, 2004, pp. 732–736, Pacific Grove, CA USA. **59 citations**
87. M. Ding, B. L. Evans, and I. C. Wong, “Effect of Channel Estimation Error on Bit Rate Performance of Time Domain Equalizers”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 7–10, 2004, pp. 2056–2060, Pacific Grove, CA USA, invited paper.
88. V. Monga and B. L. Evans, “Robust Perceptual Image Hashing Using Feature Points”, *Proc. IEEE Int. Conf. on Image Processing*, Oct. 24–27, 2004, vol. 3, pp. 677–680, Singapore. **100 citations**
89. K. Han, B. L. Evans, and E. E. Swartzlander, “Data Wordlength Reduction for Low-Power Signal Processing Software”, *Proc. IEEE Int. Workshop on Signal Processing Systems*, Oct. 13–15, 2004, pp. 343–348, Austin, TX USA.

90. I. C. Wong, Z. Shen, J. G. Andrews, and B. L. Evans, “A Low Complexity Algorithm for Proportional Resource Allocation in OFDMA Systems”, *Proc. IEEE Int. Workshop on Signal Processing Systems*, Oct. 13–15, 2004, pp. 1–6, Austin, TX USA. **425 citations**
91. V. Monga, A. Banerjee, and B. L. Evans, “Clustering Algorithms for Perceptual Image Hashing”, *Proc. IEEE Digital Signal Processing Workshop*, Aug. 1–4, 2004, pp. 283–287, Taos, NM USA.
92. D. Arifler, G. de Veciana, and B. L. Evans, “Inferring Path Sharing Based on Flow Level TCP Measurements”, *Proc. IEEE Conf. on Communications*, Jun. 20–24, 2004, vol. 4, pp. 2054–2059, Paris, France.
93. D. Arifler, G. de Veciana, and B. L. Evans, “Network Tomography Based on Flow Level Measurements”, *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, May 17–21, 2004, vol. 2, pp. 437–440, Montreal, Canada.
94. V. Monga and B. L. Evans, “Tone Dependent Color Error Diffusion”, *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, May 17–21, 2004, vol. 3, pp. 101–104, Montreal, Canada.
95. S. Banerjee and B. L. Evans, “Unsupervised Merger Detection and Mitigation in Still Images Using Frequency and Color Content Analysis”, *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, May 17–21, 2004, vol. 3, pp. 549–552, Montreal, Canada.
96. K. Han and B. L. Evans, “Wordlength Optimization with Complexity-And-Distortion Measure and Its Applications to Broadband Wireless Demodulator Design”, *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, May 17–21, 2004, vol. 5, pp. 37–40, Montreal, Canada.
97. V. Monga, N. Damera-Venkata, and B. L. Evans, “Input-Level Dependent Approach to Color Error Diffusion”, *Proc. IS&T/SPIE Conf. on Color Imaging: Processing, Hardcopy, and Applications IX*, Jan. 18–22, 2004, vol. 5293, pp. 333–343, San Jose, CA USA.
98. S. Banerjee and B. L. Evans, “Unsupervised Automation of Photographic Composition Rules in Digital Still Cameras”, *Proc. IS&T/SPIE Conf. on Sensors, Color, Cameras, and Systems for Digital Photography*, Jan. 18–22, 2004, vol. 5301, pp. 364–373, San Jose, CA USA.
99. Z. Shen, J. G. Andrews, and B. L. Evans, “Optimal Power Allocation in Multiuser OFDM Systems”, *Proc. IEEE Global Communications Conf.*, Dec. 1–5, 2003, vol. 1, pp. 337–341, San Francisco, CA USA. **355 citations**
100. M. Ding, B. L. Evans, R. K. Martin, and C. R. Johnson, Jr., “Minimum Intersymbol Interference Methods for Time Domain Equalizer Design”, *Proc. IEEE Global Communications Conf.*, Dec. 1–5, 2003, vol. 4, pp. 2146–2150, San Francisco, CA USA.
101. S. Banerjee and B. L. Evans, “A Novel Gradient Induced Main Subject Segmentation Algorithm for Digital Still Cameras”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 9–12, 2003, vol. 2, pp. 1640–1644, Pacific Grove, CA USA.
102. R. Samanta, R. W. Heath, Jr., and B. L. Evans, “Joint Space-Time Interference Cancellation and Channel Shortening”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 9–12, 2003, invited paper, vol. 1, pp. 32–36, Pacific Grove, CA USA.
103. Z. Shen, J. G. Andrews, and B. L. Evans, “Short Range Wireless Channel Prediction Using Local Information”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 9–12, 2003, vol. 1, pp. 1147–1151, Pacific Grove, CA USA.

104. R. K. Martin, C. R. Johnson, Jr., M. Ding, and B. L. Evans, "Infinite Length Results for Channel Shortening Equalizers", *Proc. IEEE Int. Work. on Signal Processing Advances in Wireless Communications*, June 15–18, 2003, Rome, Italy.
105. R. K. Martin, C. R. Johnson, Jr., M. Ding, and B. L. Evans, "Exploiting Symmetry in Channel Shortening Equalizers", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Apr. 6–10, 2003, vol. V, pp. 97–100, Hong Kong, China.
106. B. L. Evans, V. Monga, and N. Damera-Venkata, "Variations on Error Diffusion: Retrospectives and Future Trends", *Proc. SPIE/IS&T Conf. on Color Imaging: Processing, Hardcopy, and Applications*, Jan. 20–24, 2003, invited paper, vol. 5008, pp. 371–389, Santa Clara, CA USA.
107. K. Sato, B. L. Evans, and J. K. Aggarwal, "Designing an Embedded Video Processing Camera using a 16-bit Microprocessor for Surveillance System", *Proc. IEEE Workshop on Digital and Computational Video*, Nov. 14–15, 2002, pp. 151–158, Clearwater Beach, FL USA.
108. M. Milosevic, L. F. C. Pessoa, and B. L. Evans, "Simultaneous Multichannel Time Domain Equalizer Design Based On The Maximum Composite Shortening SNR", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 3–6, 2002, vol. 2, pp. 1895–1899, Pacific Grove, CA USA.
109. M. F. Sabir, R. Tripathi, B. L. Evans, and A. C. Bovik, "A Real-Time Embedded Software Implementation of a Turbo Encoder and Soft Output Viterbi Turbo Decoder", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 3–6, 2002, vol. 2, pp. 1099–1103, Pacific Grove, CA USA.
110. M. Milosevic, L. F. C. Pessoa, B. L. Evans, and R. Baldick, "DMT Bit Rate Maximization With Optimal Time Domain Equalizer Filter Bank Architecture", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 3–6, 2002, invited paper, vol. 1, pp. 377–382, Pacific Grove, CA USA.
111. N. Damera-Venkata, B. L. Evans, and J. Tuqan, "Design of Optimum Multi-Dimensional Energy Compaction Filters", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 3–6, 2002, vol. 1, pp. 350–354, Pacific Grove, CA USA.
112. Z. Wang, S. Banerjee, B. L. Evans, and A. C. Bovik, "Generalized Bitplane-by-Bitplane Shift Method for JPEG2000 ROI Coding", *Proc. IEEE Int. Conf. on Image Processing*, Sep. 22–25, 2002, vol. III, pp. 81–84, Rochester, NY USA. **68 citations**
113. D. Arifler and B. L. Evans, "Modeling the Self-Similar Behavior of Packetized MPEG-4 Video Using Wavelet-Based Methods", *Proc. IEEE Int. Conf. on Image Processing*, Sep. 22–25, 2002, vol. 1, pp. 848–851, Rochester, NY USA.
114. M. Ding, A. J. Redfern, and B. L. Evans, "A Dual-path TEQ Structure For DMT-ADSL Systems", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, May 13–17, 2002, vol. III, pp. 2573–2576, Orlando, FL USA.
115. S. Banerjee and B. L. Evans, "Tuning JPEG2000 Image Compression for Graphics Regions", *Proc. IEEE Southwest Symposium on Image Analysis and Interpretation*, Apr. 7–9, 2002, pp. 67–71, Santa Fe, NM USA.
116. K. C. Slatton, M. M. Crawford, and B. L. Evans, "Sensitivity Analysis of a Spatially-Adaptive Estimator for Data Fusion", *Proc. IEEE Southwest Symposium on Image Analysis and Interpretation*, Apr. 7–9, 2002, pp. 72–76, Santa Fe, NM USA.

117. W. Schwartzkopf, B. L. Evans, and A. C. Bovik, “Entropy Estimation for Segmentation of Multi-Spectral Chromosome Images”, *Proc. IEEE Southwest Symposium on Image Analysis and Interpretation*, Apr. 7–9, 2002, pp. 234–238, Santa Fe, NM USA.
118. W. Schwartzkopf, B. L. Evans, and A. C. Bovik, “Minimum Entropy Segmentation Applied to Multi-Spectral Chromosome Images”, *Proc. IEEE Int. Conf. on Image Processing*, Oct. 7–10, 2001, vol. II, pp. 865–868, Thessaloniki, Greece.
119. N. Damera-Venkata and B. L. Evans, “Color Error Diffusion with Generalized Optimum Noise Shaping”, *Proc. IEEE Int. Conf. on Image Processing*, Oct. 7–10, 2001, vol. II, pp. 1073–1076, Thessaloniki, Greece.
120. N. Damera-Venkata and B. L. Evans, “FM Halftoning Via Block Error Diffusion”, *Proc. IEEE Int. Conf. on Image Processing*, Oct. 7–10, 2001, vol. II, pp. 1081–1084, Thessaloniki, Greece.
121. K. C. Slatton, M. M. Crawford, and B. L. Evans, “Multiscale Adaptive Estimation for Fusing Interferometric Radar and Laser Altimeter Data”, *Proc. IEEE Int. Geoscience and Remote Sensing Sym.*, Jul. 9–13, 2001, pp. 879–881, Sydney, Australia.
122. N. Damera-Venkata and B. L. Evans, “Matrix Gain Model for Vector Color Error Diffusion”, *Proc. IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing*, Jun. 3–5, 2001, invited paper, Baltimore, MD USA.
123. H. R. Sheikh, S. Liu, B. L. Evans, and A. C. Bovik, “Real-Time Foveation Techniques for H.263 Video Encoding in Software”, *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, May 7–11, 2001, vol. 3, pp. 1781–1784, Salt Lake City, UT USA.
124. S. Banerjee, L. K. John, and B. L. Evans, “The EASE Branch Predictor”, *Proc. Int. Conf. on Communications, Computers, and Devices*, Dec. 14–16, 2000, vol. 1, pp. 59–62, Kharagpur, India.
125. J. Wu, G. Arslan, and B. L. Evans, “Efficient Matrix Multiplication Methods to Implement a Near-Optimum Channel Shortening Method for Discrete Multitone Transceivers”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 29–Nov. 1, 2000, vol. 1, pp. 152–157, Pacific Grove, CA USA.
126. S. Banerjee, H. R. Sheikh, L. K. John, B. L. Evans, and A. C. Bovik, “VLIW DSP vs. Superscalar Implementation of a Baseline H.263 Video Encoder”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 29–Nov. 1, 2000, vol. 2, pp. 1665–1669, Pacific Grove, CA USA.
127. Y. H. Cho, D. Brunke, G. E. Allen, and B. L. Evans, “Optimization of Vertical and Horizontal Beamforming Kernels on the PowerPC G4 Processor with AltiVec Technology”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 29–Nov. 1, 2000, vol. 2, pp. 1670–1674, Pacific Grove, CA USA.
128. B. L. Evans and G. Arslan, “A Signal Processing System-Level Design Course”, *Proc. IEEE Signal Processing Education Workshop*, Oct. 15–18, 2000, invited paper, Hunt, TX USA.
129. B. Lu, L. D. Clark, G. Arslan, and B. L. Evans, “Fast Time-Domain Equalization for Discrete Multitone Modulation Systems”, *Proc. IEEE Digital Signal Processing Workshop*, Oct. 15–18, 2000, Hunt, TX USA.

130. D. Talla, L. K. John, V. Lapinskii, and B. L. Evans, "Evaluating Signal Processing and Multimedia Applications on SIMD, VLIW and Superscalar Architectures", *Proc. IEEE Int. Conf. on Computer Design*, Sep. 17–20, 2000, pp. 163–172, Austin, TX USA. **61 citations**
131. Z. Wang, A. C. Bovik, and B. L. Evans, "Blind Measurement of Blocking Artifacts in Images", *Proc. IEEE Int. Conf. on Image Processing*, Sep. 10–13, 2000, vol. III, pp. 981–984, Vancouver, Canada. **546 citations**
132. K. C. Slatton, M. M. Crawford, and B. L. Evans, "Combining Interferometric Radar and Laser Altimeter Data to Improve Topography Estimates", *Proc. IEEE Int. Geoscience and Remote Sensing Sym.*, July 24–28, 2000, vol. 3, pp. 960–962, Honolulu, HI USA.
133. M. Torlak and B. L. Evans, "Self-Recovering RAKE Receiver for Asynchronous CDMA Systems", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, June 5–9, 2000, vol. 5, pp. 2869–2872, Istanbul, Turkey.
134. G. Arslan, B. L. Evans, and S. Kiaei, "Optimum Channel Shortening for Discrete Multitone Transceivers", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, June 5–9, 2000, vol. 5, pp. 2965–2968, Istanbul, Turkey.
135. N. Damara-Venkata and B. L. Evans, "Parallel Implementation of Multifilters", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, June 5–9, 2000, vol. 6, pp. 3335–3338, Istanbul, Turkey.
136. M. Valliappan, B. L. Evans, M. Gzara, M. D. Lutovac, and D. V. Tošić, "Joint Optimization of Multiple Behavioral and Implementation Properties of Digital IIR Filter Designs", *Proc. IEEE Int. Sym. on Circuits and Systems*, May 28–31, 2000, vol. 4, pp. 77–80, Geneva, Switzerland.
137. D. V. Tošić, M. D. Lutovac, and B. L. Evans, "Advanced continuous-time filter design in MATLAB," *Proc. IEEE Int. Conf. on Microelectronics*, May 14–17, 2000, vol. 2, pp. 747–750, Nis, Serbia.
138. D. V. Tošić, M. D. Lutovac, and B. L. Evans, "A MATLAB toolbox for analysis of continuous-time filters," *Proc. IEEE Int. Conf. on Microelectronics*, May 14–17, 2000, vol. 2, pp. 743–746, Nis, Serbia.
139. K. C. Slatton, M. M. Crawford, and B. L. Evans, "Improved Accuracy for Interferometric Radar Images Using Polarimetric Radar and Laser Altimetry Data", *Proc. IEEE Southwest Symposium on Image Analysis and Interpretation*, Apr. 2–4, 2000, pp. 156–160, Austin, TX USA.
140. W. Schwartzkopf, J. Ghosh, T. E. Milner, B. L. Evans, and A. C. Bovik, "Two-Dimensional Phase Unwrapping Using Neural Networks", *Proc. IEEE Southwest Symposium on Image Analysis and Interpretation*, Apr. 2–4, 2000, pp. 274–277, Austin, TX USA.
141. G. E. Allen, B. L. Evans, and L. K. John, "Real-Time High-Throughput Sonar Beamforming Kernels Using Native Signal Processing and Memory Latency Hiding Techniques", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 25–28, 1999, vol. I, pp. 137–141, Pacific Grove, CA USA.
142. G. Arslan, M. Valliappan, and B. L. Evans, "Quality Assessment of Compression Techniques for Synthetic Aperture Radar Images", *Proc. IEEE Int. Conf. on Image Processing*, Oct. 25–28, 1999, vol. III, pp. 857–861, Kobe, Japan.
143. T. D. Kite, B. L. Evans, and A. C. Bovik, "Fast Rehalftoning and Interpolated Halftoning Algorithms with Flat Low-Frequency Response", *Proc. IEEE Int. Conf. on Image Processing*, Oct. 25–28, 1999, vol. III, pp. 602–606, Kobe, Japan.

144. M. Milosevic, W. Schwartzkopf, T. E. Milner, B. L. Evans, and A. C. Bovik, “Low-Complexity Velocity Estimation in High-Speed Optical Doppler Tomography Systems”, *Proc. IEEE Int. Conf. on Image Processing*, Oct. 25–28, 1999, vol. II, pp. 658–662, Kobe, Japan.
145. M. Valliappan, B. L. Evans, D. A. D. Tompkins, and F. Kossentini, “Lossy Compression of Stochastic Halftones with JBIG2”, *Proc. IEEE Int. Conf. on Image Processing*, Oct. 25–28, 1999, vol. I, pp. 214–218, invited paper, Kobe, Japan.
146. D. V. Tošić, M. D. Lutovac, and B. L. Evans, “EMQF Filter Design in MATLAB”, *Proc. IEEE Int. Conf. on Telecommunications in Modern Satellite Cable and Broadcasting Services*, Oct. 13–15, 1999, pp. 125–128, Nis, Yugoslavia.
147. D. V. Tošić, M. D. Lutovac, and B. L. Evans, “Advanced Digital IIR Filter Design”, *Proc. European Conf. on Circuit Theory and Design*, Aug. 1999, pp. 1323–1326, Stresa, Italy.
148. B. L. Evans and G. Arslan, “Raising the Level of Abstraction: A Signal Processing System Design Course”, *Proc. IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing*, June 20–23, 1999, vol. II, pp. 569–573, invited paper, Antalya, Turkey.
149. G. Arslan, F. A. Sakarya, and B. L. Evans, “Speaker Localization for Far-field and Near-field Wideband Sources Using Neural Networks”, *Proc. IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing*, June 20–23, 1999, vol. II, pp. 528–532, Antalya, Turkey.
150. B. Lu and B. L. Evans, “Channel Equalization by Feedforward Neural Networks”, *Proc. IEEE Int. Sym. on Circuits and Systems*, May 31–Jun. 2, 1999, vol. 5, pp. 587–590, Orlando, FL USA.
151. N. Damera-Venkata and B. L. Evans, “Optimal Design of Real and Complex Minimum Phase Digital FIR Filters”, *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Mar. 15–19, 1999, vol. 3, pp. 1145–1148, Phoenix, AZ USA.
152. J.I. Kim and B. L. Evans, “System Modeling and Implementation of a Generic Video Codec”, *Proc. IEEE Workshop on Multimedia Signal Processing*, Dec. 7–9, 1998, pp. 311–316, Los Angeles, CA USA.
153. R. Bhargava, L. K. John, B. L. Evans, and R. Radhakrishnan, “Evaluating MMX Technology Using DSP and Multimedia Applications”, *Proc. ACM/IEEE Int. Sym. on Microarchitecture*, Nov. 30–Dec. 2, 1998, pp. 37–46, Dallas, TX USA. **137 citations**
154. G. E. Allen, B. L. Evans, and D. C. Schanbacher, “Real-Time Sonar Beamforming on a Unix Workstation Using Process Networks and POSIX Threads”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 1–4, 1998, invited paper, vol. 2, pp. 1725–1729, Pacific Grove, CA USA.
155. S. Gummadi and B. L. Evans, “Cochannel Signal Separation in Fading Channels Using a Modified Constant Modulus Array”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 1–4, 1998, vol. 1, pp. 764–768, invited paper, Pacific Grove, CA USA.
156. B. Lu, D. Wei, B. L. Evans, and A. C. Bovik, “Improved Matrix Pencil Methods”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 1–4, 1998, vol. 2, pp. 1433–1437, Pacific Grove, CA USA.
157. D. V. Tošić, M. D. Lutovac, B. L. Evans, and I. M. Markoski, “A Tool for Symbolic Analysis and Design of Analog Active Filters”, *Proc. Int. Workshop on Symbolic Methods and Applications in Circuit Design*, Oct. 8–9, 1998, pp. 71–74, Kaiserslautern, Germany.

158. N. Damera-Venkata, T. D. Kite, M. Venkataraman, and B. L. Evans, "Fast Blind Inverse Halftoning", *Proc. IEEE Int. Conf. on Image Processing*, Oct. 4–7, 1998, vol. 2, pp. 64–68, Chicago, IL USA.
159. T. D. Kite, N. Damera-Venkata, B. L. Evans, and A. C. Bovik, "A High Quality, Fast Inverse Halftoning Algorithm for Error Diffused Halftoned Images", *Proc. IEEE Int. Conf. on Image Processing*, Oct. 4–7, 1998, vol. 2, pp. 59–63, Chicago, IL USA.
160. N. Damera-Venkata, B. L. Evans, M. D. Lutovac, and D. V. Tošić, "Joint Optimization of Multiple Behavioral and Implementation Properties of Analog Filter Designs", *Proc. IEEE Int. Sym. on Circuits and Systems*, May 31–Jun. 3, 1998, vol. 6, pp. 286–289, Monterey, CA USA.
161. J.-I. Kim and B. L. Evans, "Predictive Shape Coding Using Generic Polygon Approximation", *Proc. IEEE Int. Sym. on Circuits and Systems*, May 31–Jun. 3, 1998, vol. 5, pp. 277–280, invited paper, Monterey, CA USA.
162. M. Torlak, B. L. Evans, and G. Xu, "Blind Estimation of FIR Channels in CDMA Systems with Aperiodic Spreading Sequences", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 3–5, 1997, vol. 1, pp. 495–499, Pacific Grove, CA USA.
163. M. D. Lutovac, D. V. Tošić, and B. L. Evans, "Advanced Filter Design", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 3–5, 1997, vol. 1, pp. 710–715, Pacific Grove, CA USA.
164. D. Wei, A. C. Bovik, and B. L. Evans, "Generalized Coiflets: A New Family of Orthonormal Wavelets", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 3–5, 1997, vol. 2, pp. 1259–1263, Pacific Grove, CA USA.
165. M. Ballan, F. A. Sakarya, and B. L. Evans, "A Fingerprint Classification Technique Using Directional Images", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 3–5, 1997, vol. 1, pp. 101–104, Pacific Grove, CA USA. **60 citations**
166. T. D. Kite, B. L. Evans, A. C. Bovik, and T. L. Sculley, "Digital Halftoning As 2-D Delta-Sigma Modulation", *Proc. IEEE Int. Conf. on Image Processing*, Oct. 26–29, 1997, vol. I, pp. 799–802, Santa Barbara, CA USA. **66 citations**
167. D. Wei, B. L. Evans, and A. C. Bovik, "Biorthogonal Quincunx Coifman Wavelets", *Proc. IEEE Int. Conf. on Image Processing*, Oct. 26–29, 1997, vol. II, pp. 246–249, Santa Barbara, CA USA.
168. M. D. Lutovac, D. V. Tošić, and B. L. Evans, "Design Space Approach to Advanced Filter Design", *Proc. IEEE Int. Conf. on Telecommunications in Modern Satellite Cable and Broadcasting Services*, Oct. 10–18, 1997, pp. 179–190, Nis, Serbia, Yugoslavia.
169. M. D. Lutovac, D. V. Tošić, and B. L. Evans, "Symbolic Analysis of Programmable Digital Filters", *Proc. IEEE Int. Conf. on Microelectronics*, Sep. 14–17, 1997, vol. 2, pp. 713–716, Nis, Serbia, Yugoslavia.
170. B. Lu, B. L. Evans, and D. V. Tošić, "Simulation and Synthesis of Artificial Neural Networks Using Dataflow Models in Ptolemy", *Proc. Seminar on Neural Network Applications in Electrical Engineering*, Sep. 8–9, 1997, pp. 84–89, invited paper, Belgrade, Yugoslavia.
171. M. Torlak, G. Xu, B. L. Evans, and H. Liu, "Estimation of Optimal Weight Vectors for Broadcast Channels", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Apr. 21–24, 1997, vol. 5, pp. 4009–4012, Munich, Germany.

172. R. Ahmed and B. L. Evans, "Optimization of Signal Processing Algorithms", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 3–6, 1996, vol. II, pp. 1401–1406, Pacific Grove, CA USA.
173. M. Torlak, G. Xu, B. L. Evans, and H. Liu, "Optimal Weight Vectors for Spatial Broadcast Channels", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 3–6, 1996, vol. 1, pp. 65–69, Pacific Grove, CA USA.
174. M. D. Lutovac, D. V. Tošić, and B. L. Evans, "An Algorithm for Symbolic Design of Elliptic Filters", *Proc. Int. Workshop on Symbolic Methods and Applications to Circuit Design*, Oct. 10–11, 1996, pp. 248–251, Leuven, Belgium.
175. R. Mani, S. H. Nawab, J. M. Winograd, and B. L. Evans, "Integrated Numeric and Symbolic Signal Processing Using a Heterogeneous Design Environment", *Proc. SPIE Int. Sym. on Advanced Signal Processing Algorithms*, Aug. 6–8, 1996, vol. 2846, pp. 445–456. Denver, CO USA.
176. K. H. Chiang, B. L. Evans, W. T. Huang, F. Kovac, E. A. Lee, D. G. Messerschmitt, H. J. Reekie, and S. S. Sastry, "Real-Time DSP for Sophomores", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, May, 1996, vol. II, pp. 1097–1100, invited paper, Atlanta, GA USA.
177. G. Arslan, B. L. Evans, F. A. Sakarya, and J. L. Pino, "Performance Evaluation and Real-Time Implementation of Subspace, Adaptive, and DFT Algorithms for Multi-Tone Detection", *Proc. IEEE Int. Conf. on Telecommunications*, Apr. 14–17, 1996, pp. 884–887, Istanbul, Turkey.
178. B. L. Evans, D. R. Firth, K. D. White, and E. A. Lee, "Automatic Generation of Programs That Jointly Optimize Characteristics of Analog Filter Designs", *Proc. European Conf. on Circuit Theory and Design*, Istanbul, Turkey, pp. 1047–1050, Aug. 27–31, 1995.
179. B. L. Evans, S. X. Gu, A. Kalavade, and E. A. Lee, "Symbolic Computation in System Simulation and Design", *Proc. SPIE Int. Sym. on Advanced Signal Processing Algorithms*, Jul. 10–12, 1995, vol. 2563, pp. 396–407, invited paper, San Diego, CA USA.
180. C. Schwarz, J. Teich, A. Vainshtein, E. Welzl, and B. L. Evans, "Minimal Enclosing Parallelogram with Application", *Proc. ACM Sym. on Computational Geometry*, Jun. 5–7, 1995, pp. C34–C35, Vancouver, Canada.
181. R. H. Bamberger, B. L. Evans, E. A. Lee, J. H. McClellan, and M. A. Yoder, "Integrating Analysis, Simulation, and Implementation Tools in Electronic Courseware for Teaching Signal Processing", *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, May 9–12, 1995, vol. 5, pp. 2873–2876, invited paper, Detroit, MI USA.
182. B. L. Evans and J. H. McClellan, "Algorithms for Symbolic Linear Convolution", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 31–Nov. 2, 1994, pp. 948–953, Pacific Grove, CA USA.
183. B. L. Evans, S. X. Gu, and R. H. Bamberger, "Interactive Solution Sets as Components of Fully Electronic Signals and Systems Courseware", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 31–Nov. 2, 1994, pp. 1314–1319. Pacific Grove, CA USA.
184. B. L. Evans, J. Teich, and C. Schwarz, "Automated Design of Two-Dimensional Rational Decimation Systems", *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 31–Nov. 2, 1994, pp. 498–502, Pacific Grove, CA USA.

185. B. L. Evans, J. Teich, and T. A. Kalker, “Families of Smith Form Decompositions to Simplify Multidimensional Filter Bank Design”, *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Oct. 31–Nov. 2, 1994, pp. 363–367, Pacific Grove, CA USA.
186. B. L. Evans, J. H. McClellan, and H. J. Trussell, “Investigating Signal Processing Theory with Mathematica”, *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Apr. 27–30, 1993, vol. I, pp. 12–15, Minneapolis, MN USA.
187. B. L. Evans, J. H. McClellan, and R. H. Bamberger, “A Symbolic Algebra for Linear Multidimensional Multirate Systems”, *Proc. Conf. on Information Sciences and Systems*, March, 1992, pp. 387–393, Princeton, NJ USA.
188. B. L. Evans, J. H. McClellan, and K. A. West, “Mathematica as an Educational Tool for Signal Processing”, *Proc. IEEE Southeastcon Conf.*, Apr. 8–10, 1991, pp. 1162–1166, Williamsburg, VA USA.
189. E. V. Garcia, M. D. Herbst, C. D. Cooke, N. F. Ezquerra, B. L. Evans, R. D. Folks, and E. G. DePuey, “Knowledge-Based Visualization of Myocardial Perfusion Tomographic Images”, *Proc. IEEE Conf. on Visualization in Biomedical Computing*, May 1990, pp. 157–161. Atlanta, GA USA.
190. B. L. Evans, J. H. McClellan, and W. B. McClure, “Symbolic  $z$ -Transforms Using DSP Knowledge Bases”, *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Apr. 3–6, 1990, vol. 3, pp. 1775–1778. Albuquerque, NM USA.

#### *Other Conference and Journal Publications*

1. G. Sebaali and B. L. Evans, “Design Space Exploration for Smart Grid Communication Transceivers”, *Proc. SRC Technical Conference*, Sep. 20–22, 2015, Austin, TX USA.
2. M. M. Mansour, M. Bayoumi and B. L. Evans, “Prototyping of DSP Architectures for Multi-Media Communication”, *Journal of Signal Processing Systems*, Editorial for the Special Issue on Mobile Embedded Systems, vol. 70, no. 2, Feb. 2013, pp. 87–89.
3. K. D. Wesson, T. E. Humphreys and B. L. Evans, “Position Paper: Secure Time Transfer for CPS”, *NSF/NSA National Workshop on The New Clockwork for Time-Critical Systems*, Oct. 25–27, 2012, Baltimore, MD USA. Slides.
4. A. G. Olson, I. C. Wong, B. L. Evans, A. Chopra, and Y. Mortazavi, “2 x 2 MIMO Discrete Multitone Transceiver Testbed,” National Instruments Week, August 7–9, 2007, Austin, Texas USA. 1 page. **2007 National Instruments Week Virtual Instrumentation Applications Paper Finalist, Prototyping and Testing Category (second place).**
5. H. R. Sheikh, S. Banerjee, B. L. Evans, and A. C. Bovik, “Optimization of a Baseline H.263 Video Encoder on the TMS320C6x”, *Proc. Texas Instruments DSP Educator’s Conf.*, Aug. 2–4, 2000, Houston, TX USA, 3 pages.
6. S. Lee, A. C. Bovik, and B. L. Evans, “Efficient Implementation of Foveation Filtering”, *Proc. Texas Instruments DSP Educator’s Conf.*, Aug. 3–8, 1999, Houston, TX USA, 5 pages.
7. R. Bhargava, R. Radhakrishnan, B. L. Evans, and L. John, “Characterization of MMX-enhanced DSP and Multimedia Applications on a General Purpose Processor”, *Digest of Workshop on Performance Analysis and Its Impact on Design*, July 27–28, 1998, Barcelona, Spain, pp. 16–23.

8. B. L. Evans, A. Kamas and E. A. Lee, “Design and Simulation of Heterogeneous Systems Using Ptolemy”, *Proc. Rapid Prototyping of Application Specific Signal Processors Conference*, Aug. 15–18, 1994, Arlington, VA USA, pp. 97–105.
9. B. L. Evans and F. A. Sakarya, “Interactive Graphical Design of Two-Dimensional Compression Systems”, *Proc. National Workshop on Signal Processing*, pp. 173–178, Apr. 8–9, 1994, Marmaris, Turkey.

#### *Books and Book Chapters*

1. K. Han and B. L. Evans, *Transforming Floating-Point Algorithms to Fixed-Point Implementations*, VDM Verlag Publishing, Jun. 2009, ISBN 978-3-639-16090-1.
2. I. C. Wong and B. L. Evans, *Resource Allocation in Multiuser Multicarrier Wireless Systems*, Springer, Nov. 2007, ISBN 978-0-387-74944-0.
3. V. Monga, N. Damera-Venkata, and B. L. Evans, “Color Image Halftoning”, in *Color Image Processing: Methods and Applications*, CRC Press, Sep. 2006.
4. K. C. Slatton and B. L. Evans, “Software for Image and Video Processing”, in *Handbook of Image and Video Processing*, (ed. A. C. Bovik), Second Edition, Academic Press, 2005.
5. M. D. Lutovac, D. V. Tošić, and B. L. Evans, *Filter Design for Signal Processing*, Prentice Hall, ISBN 0-201-36130-2, 2001. (Chinese translation published in 2005.) **262 citations**
6. K. C. Slatton and B. L. Evans, “Software for Image and Video Processing”, in *Handbook of Image and Video Processing*, (ed. A. C. Bovik), pp. 449–460, Academic Press, ISBN 0-12-119790-5, 2000.
7. B. L. Evans and J. H. McClellan, “Symbolic Analysis of Signals and Systems”, in *Symbolic and Knowledge-Based Signal Processing*, (eds. A. V. Oppenheim and S. H. Nawab), pp. 88–141, Prentice Hall, 1992.

#### *Technical Reports*

1. F. B. Mismar and B. L. Evans, “Machine Learning in Downlink Coordinated Multipoint in Heterogeneous Networks”, *Technical Report*, Feb. 1, 2019.
2. B. L. Evans, A. Chopra, and Y. Mortazavi, “Building a Real-Time Multichannel Modem Test Bed Using NI LabVIEW and PXI”, National Instruments, Case Study 11568, Dec. 2008.
3. K. Gulati, M. Nassar, N. Aghasadeghi, A. Sujeeth, and B. L. Evans, “In-Platform Radio Frequency Interference Mitigation for Wireless Communications”, Embedded Signal Processing Laboratory, The University of Texas at Austin, May 2007.
4. M. Milosevic, L. F. C. Pessoa, B. L. Evans, and R. Baldick, “Optimal Time Domain Equalization Design for Maximizing Data Rate of Discrete Multi-Tone Systems,” Technical Report WNCG-TR-2003-05-03, May 2003.
5. Z. Shen, J. G. Andrews, and B. L. Evans, “Optimal Power Allocation in Multiuser OFDM Systems,” Technical Report WNCG-TR-2003-02-04, Feb. 2003. Appeared in 2003 *Proc. IEEE Global Communications Conf.*.

6. R. K. Martin, M. Ding, B. L. Evans, and C. R. Johnson, Jr., "Infinite Length Results and Design Implications for Time-Domain Equalizers," Technical Report WNCG-TR-2003-02-06, Feb. 2003. Appeared in the *IEEE Transactions on Signal Processing* in Jan. 2004.
7. R. K. Martin, M. Ding, B. L. Evans, and C. R. Johnson, Jr., "Efficient Channel Shortening Equalizer Design," Technical Report WNCG-TR-2003-01-03, Jan. 2003. Appeared in the *EURASIP Journal on Applied Signal Processing* in Dec. 2003.
8. D. Arifler, C. Duong, B. L. Evans, and S. Gummadi, "Web-Enabled Texas Instruments TMS320C30 Simulator", for the 1997 Texas Instruments DSP Solutions Contest.
9. C. Schwarz, J. Teich, E. Welzl, and B. L. Evans, "On Finding a Minimal Enclosing Parallelogram", Tech. Rep. TR-94-036, International Computer Science Institute, 1947 Center Street, Suite 600, Berkeley, CA, 94704-1198 USA, Aug. 1994.

## Oral Presentations

1. May 24, 2018, "Real-Time Testbed for Diversity in Powerline and Wireless Smart Grid Communications", IEEE International Conference on Communications, Workshop Integrating Comm., Control, Comp. Tech. for Smart Grid, Kansas City, Missouri USA.
2. March 22, 2018, "Massive MIMO Cost Reduction", Futurewei Site Visit, The University of Texas at Austin, Austin, Texas USA.
3. November 9, 2016, "No-reference Image Quality Assessment for High Dynamic Range Images", Asilomar Conference on Signals, Systems and Computers, Pacific Grove, California USA.
4. October 20, 2016, "Energy-Efficient Signal Processing Techniques for Smart Grid Heterogeneous Communications Networks", Dallas, Texas USA.
5. September 26, 2016, "Visual Attention Guided Quality Assessment of Tone-Mapped Images using Scene Statistics", IEEE International Conference on Image Processing, Phoenix, Arizona USA.
6. July 23, 2015, "Baseband LTE Compression", Futurewei, Dallas, Texas USA.
7. May 7, 2014, "Energy-Efficient Signal Processing Techniques for Smart Grid Heterogeneous Communications Networks", Project Kickoff Talk, Semiconductor Research Corporation Review, Pittsburg, Pennsylvania USA.
8. August 7, 2013, "Experts Panel: Future of Wireless Communications System Design", with co-panelists Prof. Ted Rappaport, Prof. Costas Georgiades, Mr. Mark Cudak, Prof. Robert Heath, and Mr. Matt Ettus, Invited Presentation, National Instruments Week Conference, Austin, Texas USA.
9. August 7, 2013, "Smart Grid Communications", Invited Talk, National Instruments Week Conference, Austin, Texas USA.
10. June 20, 2013, "Smart Grid Communications", Keynote Talk, International Conference on Communications and Information Technology, Beirut, Lebanon.
11. May 6, 2013, "FPGA Implementation of a Message-Passing OFDM Receiver for Impulsive Noise Channels", National Instruments Project Review, Austin, TX USA
12. May 2, 2013, "Powerline Communications for Enabling Smart Grid Applications", Semiconductor Research Corporation Annual Project Review, Intel, Portland, OR USA.

13. December 14, 2012, "Smart Grid Communications", Department of Electrical and Computer Engineering, The University of Texas at Dallas, Richardson, Texas USA.
14. October 25, 2012, "Cloud Radio Access Networks", The University of Texas at Austin, Austin, Texas USA. (With co-presenters Gustavo de Veciana, Mattan Erez and Robert W. Heath, Jr.)
15. August 6, 2012, "FPGA Implementation of Denoising in OFDM Systems using DSP Diagram", NI Week Conference, Austin, Texas USA.
16. July 17, 2012, "Powerline Communications for Smart Grids", Department of Electrical and Computer Engineering, American University of Beirut, Beirut, Lebanon.
17. May 10, 2012, "Interference Mitigation in Wireless OFDM Communication Systems: Application Case Studies for NI DSP Designer", National Instruments, Austin, Texas USA.
18. May 3, 2012, "Powerline Communications for Enabling Smart Grid Applications", Semiconductor Research Corporation Annual Review, Georgia Institute of Technology, Atlanta, Georgia USA.
19. November 10, 2011, "Dataflow Modeling of Signal Processing and Communication Systems", Guest Lecture for EE 382V Embedded System Design and Modeling, The University of Texas at Austin, Austin, Texas USA.
20. September 8, 2011, "Interference Mitigation in Wireless OFDM Communication Systems: Application Case Studies for NI DSP Designer", National Instruments, Austin, Texas USA.
21. August 4, 2011, "Non-Parametric Methods for Mitigating Interference in OFDM Systems", Department of Electrical and Computer Engineering, American University of Beirut, Beirut, Lebanon.
22. March 24, 2011, "Design of Interference-Aware Wireless Communication Systems", Commscope and Texas Instruments, Dallas, Texas.
23. March 8, 2011, "Powerline Communications for Enabling Smart Grid Applications", Semiconductor Research Corporation Annual Review, University of California, Los Angeles, California.
24. December 16, 2010, "Design of Interference-Aware Wireless Communication Systems", Cockrell School of Engineering, Austin, Texas.
25. December 2, 2010, "Design of Interference-Aware Wireless Communication Systems", Intel Virtual Presentation, Austin, Texas.
26. November 9, 2010, "Doppler estimation and correction for shallow underwater acoustic communications", Asilomar Conference on Signals, Systems and Computers, Pacific Grove, California.
27. October 20, 2010, "Overcoming Interference Limitations in Networked Systems", The University of Texas at Austin, Austin, Texas USA.
28. October 7, 2010, "Dataflow Modeling of Signal Processing and Communication Systems", Guest Lecture for EE 382V Embedded System Design and Modeling, The University of Texas at Austin, Austin, Texas USA.
29. July 27, 2010, "Reducing Complexity in Signal Processing Algorithms for Communication Receiver and Image Display Software", Department of Electrical and Computer Engineering, American University of Beirut, Beirut, Lebanon.

30. April 12, 2010, "Radio Frequency Interference Sensing and Mitigation in Wireless Receivers", Intel, Hillsboro, Oregon USA.
31. January 12, 2010, "Statistical Signal Processing for Sensing and Mitigating Impulsive Noise in Communication Receivers", Texas Instruments, Dallas, Texas USA.
32. October 7, 2009, "Radio Frequency Interference Sensing and Mitigation in Wireless Receivers", VLSI Seminar Series, The University of Texas at Austin, Austin, Texas USA.
33. June 23, 2009, "Radio Frequency Interference Sensing and Mitigation in Wireless Receivers", Department of Electrical and Computer Engineering, American University of Beirut, Beirut, Lebanon.
34. March 16, 2009, "Radio Frequency Interference Sensing and Mitigation in Wireless Receivers", Intel Labs, Hillsboro, Oregon USA.
35. October 29, 2008, "Adaptive Downlink OFDMA Resource Allocation", IEEE Asilomar Conference on Signals, Systems and Computers, Pacific Grove, California USA.
36. October 27, 2008, "Advanced Sonar Processing Techniques for Underwater Acoustic Multi-Input Multi-Output Communications", IEEE Asilomar Conference on Signals, Systems and Computers, Pacific Grove, California USA.
37. October 21, 2008, "Dataflow Modeling of Signal Processing and Communication Systems", Guest Lecture for EE 382V Embedded System Design and Modeling, The University of Texas at Austin, Austin, Texas USA.
38. October 16, 2008, "Improving Wireless Data Transmission Speed and Reliability to Mobile Computing Platforms", Texas Wireless Summit, Austin, Texas USA.
39. October 9, 2008, "Mitigating Computer Platform Radio Frequency Interference in Embedded Wireless Receivers", Electrical and Computer Engineering Seminar, Carnegie Mellon University, Pittsburgh, Pennsylvania USA.
40. August 26, 2008, "Embedded Signal Processing Systems", The University of Texas at Austin, Austin, Texas USA.
41. July 16, 2008, "Improving Wireless Data Transmission Speed and Reliability to Mobile Computer Platforms", American University of Beirut, Beirut, Lebanon.
42. February 25, 2008, "Mitigating Computer Platform Radio Frequency Interference in Embedded Wireless Transceivers", Intel, Portland, Oregon USA.
43. November 7, 2007, "Error Diffusion Halftoning Methods for Image Display", Qualcomm MEMS Technology, Santa Clara, California USA.
44. November 6, 2007, "Resource Allocation in Downlink Multiuser Multicarrier Wireless Systems", Intel, Santa Clara, California USA.
45. October 17, 2007, "Mitigating Computer Platform Radio Frequency Interference in Embedded Wireless Transceivers", The University of Texas at Austin, Austin, Texas USA.
46. August 8, 2007, Moderated panel discussion on "Bridging the Academic and Industry DSP Gaps". C. Sidney Burrus (Rice University), Chris H. Dick (Xilinx), Gene Frantz (TI), James H. McClellan (Georgia Institute of Technology), Ronald W. Schafer (HP Labs) and Mark A. Yoder (Rose-Hulman Institute of Technology), National Instruments Week, Austin, Texas USA.

47. April 16, 2007, "Mitigating Radio Frequency Interference from the Computer Platform to Improve Wireless Data Communications", Intel Labs, Portland, Oregon USA.
48. July 5, 2006, "Resource Allocation for Mobile Multiuser OFDM Systems", Dept. of Electrical and Computer Engineering, American University of Beirut, Beirut, Lebanon.
49. July 4, 2006, "Automating Floating-point to Fixed-point Transformations For Implementing Digital Signal Processing Algorithms", Dept. of Electrical and Computer Engineering, American University of Beirut, Beirut, Lebanon.
50. March 1, 2006, "Panel on Processor Benchmarking — Measuring DSP Performance in a Meaningful Way", Texas Instruments Developer's Conference, Dallas, Texas USA.
51. February 17, 2006, "Resource Allocation for Mobile Multiuser OFDM Systems", Center for Signal and Image Processing, Georgia Institute of Technology, Atlanta, Georgia USA.
52. November 2, 2005, "Halftoning-Inspired Methods for Foveation in Variable-Acuity Superpixel Imager (VASI) Cameras", IEEE Asilomar Conf. on Signals, Systems, and Computers, Pacific Grove, California.
53. August 16, 2005, "NI at ECE at UT Austin", Signal Processing Workshop, NI Week 2005, Austin, Texas USA.
54. August 8, 2005, "Equalizer Design to Maximize Bit Rate in ADSL Transceivers", Dept. of Electrical and Computer Engineering, American University of Beirut, Beirut, Lebanon.
55. June 30, 2005, "Modem Design, Implementation, and Testing Using NI's LabVIEW", NI Academic Day, Beirut, Lebanon.
56. March 22, 2005, "Deadlock Detection for Distributed Process Networks", *IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Philadelphia, Pennsylvania USA.
57. June 16, 2004, "Equalization for ADSL Transceivers", Dept. of Electrical and Computer Engineering, American University of Beirut, Beirut, Lebanon.
58. May 18, 2004, "Network Tomography Based on Flow Level Measurements", Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing, Montreal, Canada.
59. May 11, 2004, "High-Speed Wireline Communication Systems", The University of Texas, Austin, Texas USA.
60. February 19, 2004, "Modem Design, Implementation, and Testing Using NI's LabVIEW", *Texas Instruments Developer's Conference*, Houston, Texas USA.
61. November 21, 2003, "Embedded Signal Processing", National Instruments, Austin, Texas USA.
62. August 20, 2003, "Error Diffusion Halftoning Methods for Printing and Display", Xerox Research Labs, Webster, New York USA.
63. April 2, 2003, "The Future of DSP Engineering Panel," International Signal Processing Conference, Dallas, Texas USA.
64. March 29, 2003, "How ADSL Modems Work", Sophomore Engineering Honors Program, The University of Texas at Austin, Austin, Texas USA.

65. February 21, 2003, "Equalizer Design to Maximize Bit Rate in ADSL Transceivers", Dept. of ECE, The University of Texas at Austin, Austin, Texas USA.
66. January 24, 2003, "Variations on Error Diffusion: Retrospectives and Future Trends", SPIE/IS&T Symposium on Electronic Imaging, Santa Clara, California USA.
67. January 9, 2003, "Embedded Signal Processing Laboratory at UT Austin", National Instruments, Austin, Texas USA.
68. November 8, 2002, "Equalization for ADSL Transceivers", Dept. of ECE, University of California, Davis, California USA.
69. November 7, 2002, "Error Diffusion Halftoning Methods for High-Quality Printed and Displayed Images", California Research Center, Ricoh Innovations, Inc., Menlo Park, California USA.
70. November 6, 2002, "Error Diffusion Halftoning Methods for High-Quality Printed and Displayed Images", Apple, Inc., Cupertino, California USA.
71. November 1, 2002, "Equalization for ADSL Transceivers", Dept. of EE, Stanford University, Stanford, California USA.
72. October 31, 2002, "Error Diffusion Halftoning Methods for High-Quality Printed and Displayed Images", HP Laboratories, Palo Alto, California USA.
73. October 8, 2002, "Equalization for ADSL Transceivers", Dept. of ECE, Cornell University, Ithaca, New York USA.
74. October 2, 2002, "Error Diffusion Halftoning Methods for High-Quality Printed and Displayed Images: Part II Color Halftoning", Dept. of ECE, Cornell University, Ithaca, New York USA.
75. September 18, 2002, "Error Diffusion Halftoning Methods for High-Quality Printed and Displayed Images: Part I Grayscale Halftoning", Dept. of ECE, Cornell University, Ithaca, New York USA.
76. September 13, 2002, "Equalization for ADSL Transceivers", Dept. of ECECS, University of Cincinnati, Cincinnati, OH.
77. September 12, 2002, "Equalization for ADSL Transceivers", Dept. of ECE, Purdue University, West Lafayette, IN.
78. September 11, 2002, "Error Diffusion Halftoning Methods for High-Quality Printed and Displayed Images", Dept. of ECE, Purdue University, West Lafayette, IN.
79. June 5, 2002, "BSEE and BS Comp. Eng. Curriculum for the 2002–2004 Catalog", The University of Texas at Austin, Austin, Texas USA.
80. January 24, 2002, "Time-Domain Equalization for ADSL Transceivers", Telecommunications and Signal Processing Seminar, Dept. of ECE, The University of Texas, Austin, Texas USA.
81. October 27, 2001, "Time-Domain Equalization for ADSL Transceivers", Texas Systems Day 2001, Dept. of ECE, Texas Tech University, Lubbock, Texas USA.
82. October 26, 2001, "How to Make Printed and Displayed Images Have High Visual Quality", Center for Perceptual Systems Seminar Series, The University of Texas at Austin, Austin, Texas USA.

83. September 25, 2001, "BSEE and BS Comp. Eng. Curriculum for the 2002–2004 Catalog", The University of Texas at Austin, Austin, Texas USA.
84. September 7, 2001, "Time-Domain Equalization for ADSL Transceivers", Telecommunications and Signal Processing Seminar, Dept. of ECE, The University of Texas at Austin, Austin, Texas USA.
85. August 3, 2001, "Time-Domain Equalization for ADSL Transceivers", Dept. of ECE, University of British Columbia, Vancouver, BC Canada.
86. July 9, 2001, "Time-Domain Equalization for ADSL Transceivers", Rhodes Hall, Dept. of ECE, Cornell University, Ithaca, New York USA.
87. May 21, 2001, "Time-Domain Equalization for ADSL Transceivers", Dept. of EE, Southern Methodist University, Dallas, Texas USA.
88. April 10, 2001, "Time-Domain Equalization for ADSL Transceivers", Dept. of EE, Texas A&M University, College Station, Texas USA.
89. April 6, 2001, "Time-Domain Equalization for ADSL Transceivers", Dept. of EE, The University of Texas at Arlington, Arlington, Texas USA.
90. March 29, 2001, "Time-Domain Equalization for ADSL Transceivers", 487 Goldwater Research Center, Arizona State University, Tempe, AZ. (Slides)
91. March 27, 2001, "BSEE and BS Comp. Eng. Curriculum for the 2002–2004 Catalog", The University of Texas at Austin, Austin, Texas USA.
92. March 26, 2001, "BSEE and BS Comp. Eng. Curriculum for the 2002–2004 Catalog", The University of Texas at Austin, Austin, Texas USA.
93. February 16, 2001, "Time-Domain Equalization for ADSL Transceivers", Center for Signal and Image Processing, Georgia Institute of Technology, Atlanta, Georgia USA.
94. February 8, 2001, "Time-Domain Equalization for ADSL Transceivers", Dept. of ECE, The University of Texas at Dallas, Richardson, Texas USA.
95. February 2, 2001, "Time-Domain Equalization for ADSL Transceivers", Dept. of ECE, The University of Texas at Austin, Austin, Texas USA.
96. November 10, 2000, "Software Development in the Unix Environment", Dept. of ECE, The University of Texas at Austin, Austin, Texas USA.
97. October 24, 2000, "Summary of Faculty and Student Discussions for the BSEE Curriculum for the 2002–2004 Catalog", The University of Texas at Austin, Austin, Texas USA.
98. October 17, 2000, "A Signal Processing System Design Course", IEEE Signal Processing Education Workshop, Hunt, Texas.
99. October 17, 2000, "Fast Time-Domain Equalization for Discrete Multitone Modulation Systems", IEEE Digital Signal Processing Workshop, Hunt, Texas.
100. September 5, 2000, "BSEE and BS Comp. Eng. Degrees: Ideas for the 2002-2004 Catalog", The University of Texas at Austin, Austin, Texas USA. (PowerPoint)

101. August 25, 2000, "Telecommunications and Signal Processing at UT Austin", Motorola, Austin, Texas USA. (PowerPoint)
102. May 30, 2000, "Telecommunications and Signal Processing at UT Austin", Texas Instruments, Dallas, Texas USA. (PowerPoint)
103. May 26, 2000, "Telecommunications and Signal Processing at UT Austin", Motorola, Austin, Texas USA. (PowerPoint)
104. February 2, 2000, "Introduction to Digital Signal Processors", Guest Lecture for EE382M Application-Specific Processing, The University of Texas at Austin, Austin, Texas USA
105. January 24, 2000, "Experiences using WebCT: Empower the Students and Burden your TA", College of Engineering Brown Bag Seminar, The University of Texas at Austin, Austin, Texas USA
106. October 27, 1999, "Quality Assessment of Compression Techniques for Synthetic Aperture Radar Images," *IEEE Int. Conf. on Image Processing*
107. October 27, 1999, "Low Delay Foveated Visual Communications Over Wireless Channels," *IEEE Int. Conf. on Image Processing*
108. October 27, 1999, "Fast Rehalftoning and Interpolated Halftoning Algorithms with Flat Low-Frequency Response," *IEEE Int. Conf. on Image Processing*
109. October 26, 1999, "Motion Estimation and Compensation for Foveated Video," *IEEE Int. Conf. on Image Processing*
110. October 25, 1999, "Lossy Compression of Stochastic Halftones with JBIG2," *IEEE Int. Conf. on Image Processing*
111. August 6, 1999, "Efficient Implementation of Foveation Filtering", Texas Instruments Digital Signal Processing Systems Conference, Houston, Texas USA.
112. August 5, 1999, "A Framework for Real-time High-Throughput Signal and Image Processing on Workstations", Bellaire Technology Center, Shell Company, Houston, Texas USA.
113. April 29, 1999, "Introduction to System-Level Design", Guest Lecture for EE382C-8 Methodology for Hardware/Software Codesign, Dept. of ECE, The University of Texas at Austin, Austin, Texas USA.
114. March 31, 1999, "Introduction to System-Level Design", Guest Lecture for EE382M Application-Specific Processing, Dept. of ECE, The University of Texas at Austin, Austin, Texas USA.
115. March 26, 1999, "Software Development in the Unix Environment", Dept. of ECE, The University of Texas at Austin, Austin, Texas USA.
116. March 6, 1999, "Embedded Signal Processing Laboratory", Prospective Graduate Student Site Visit, Dept. of ECE, The University of Texas at Austin, Austin, Texas USA.
117. February 24, 1999, "Introduction to Digital Signal Processors", Guest Lecture for EE382M Application-Specific Processing, Dept. of ECE, The University of Texas at Austin, Austin, Texas USA.
118. February 22, 1999, "Introduction to Digital Signal Processors", HP Laboratories, Palo Alto, California USA.

119. February 19, 1999, "Real-Time Process Network Sonar Beamformer", Ptolemy Miniconference, University of California, Berkeley, California USA.
120. January 11, 1999, "Scalable Software and Hardware for Image and Video Processing Systems", National Science Foundation CAREER Principal Investigator Conference, Washington, District of Columbia, USA.
121. November 4, 1998, "Interpolated Halftoning, Rehalftoning, and Compression of Halftones", HP Laboratories, Palo Alto, California USA.
122. November 3, 1998, "Improved Matrix Pencil Methods", IEEE Asilomar Conf. on Signals, Systems, and Computers, Pacific Grove, California USA.
123. October 28, 1998, "Image Halftoning", Signal and Image Processing Seminar, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, Texas USA.
124. October 15, 1998, "Signal Processing for Wireless Basestations", Wireless Communications Laboratory Seminar, Texas A&M University, College Station, Texas USA.
125. August 27, 1998, "Design and Quality Assessment of Forward and Inverse Error Diffusion Image Halftoning Algorithms", Center for Signal and Image Processing Seminar, Georgia Institute of Technology, Atlanta, Georgia USA.
126. August 7, 1998, "Embedded Halftoning and Inverse Halftoning for JBIG2 Coding", Texas Instruments Digital Signal Processing Systems Fest, Houston, Texas USA.
127. August 3, 1998, "Embedded Signal Processing Laboratory", Digital Signal Processing R&D Center, Texas Instruments, Dallas, Texas USA.
128. June 9, 1998, "Embedded Signal Processing Laboratory", HP EEsof, Westlake Village, California USA.
129. June 8, 1998, "Embedded Signal Processing Laboratory", Rockwell Science Center, Thousand Oaks, California USA.
130. June 2, 1998, "Joint Optimization of Multiple Behavioral and Implementation Properties of Analog Filter Designs", IEEE Int. Sym. on Circuits and Systems, Monterey, California USA.
131. April 13, 1998, "Overview of Research in the Embedded Signal Processing Laboratory", Motorola, Austin, Texas USA
  - Overview
  - Analog IIR Filter Optimization
  - HDSL2 Modem Design
132. March 10, 1998, "Heterogeneous Modeling and Design: UT Austin Subcontract", slides by Prof. Brian L. Evans but presented by Prof. Edward A. Lee, DARPA Informal Review, University of California at Berkeley, Berkeley, California USA.
133. February 11, 1998, "Advanced Digital Signal Processing for Communications Systems", IEEE Communication Society Seminar, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, Texas USA.

134. January 23, 1998, "Software Development in the Unix Environment", Electrical and Computer Engineering Departmental Seminar, The University of Texas at Austin, Austin, Texas USA.
135. January 5, 1998, "Advanced Filter Design for Communications and Signal Processing Systems", Center for Signal and Image Processing Seminar, Georgia Institute of Technology, Atlanta, Georgia USA.
136. December 5, 1997, "Summary of Abstracts Submitted to the Texas Instruments University DSP R&D Fund", DSP R&D Center, Texas Instruments, Dallas, Texas USA.
- "Web-Enabled Simulation of Texas Instruments DSP Processors and Boards"
  - "Design Tools to Help Map Applications into Minimum Power Implementations on TMS320C54x and TMS320C6x Processors"
  - "High-Speed Digital Subscriber Line Generation 2 (HDSL2) Modem on a Single TMS320C6x Processor"
  - "Towards a DSP Solution for Real-Time MPEG-2 Encoding "
  - "Standards-Compliant High-Quality Low-Bitrate Wireless Video Communications Using TMS320C6x and TMS320C54x Processors"
137. November 21, 1997, "Advanced Filter Design for Communications and Signal Processing Systems", Digital Signal Processing Seminar, The University of Texas at Austin, Austin, Texas USA.
138. November 10, 1997, "The Wonders of Digital Signal Processing", IEEE Brown Bag Lunch, The University of Texas at Austin, Austin, Texas USA.
139. November 4, 1997, "Generalized Coiflets", IEEE Asilomar Conf. on Signals, Systems, and Computers, Pacific Grove, California USA.
140. November 4, 1997, "Advanced Filter Design", IEEE Asilomar Conf. on Signals, Systems, and Computers, Pacific Grove, California USA.
141. November 3, 1997, "Blind Channel Estimation in CDMA Systems with Aperiodic Spreading Sequences", IEEE Asilomar Conf. on Signals, Systems, and Computers, Pacific Grove, California USA.
142. November 3, 1997, "A Fingerprint Classification Technique Using Directional Images", IEEE Asilomar Conf. on Signals, Systems, and Computers, Pacific Grove, California USA.
143. October 28, 1997, "Biorthogonal Quincunx Coifman Wavelets", IEEE Int. Conf. on Image Processing, Santa Barbara, California USA.
144. October 27, 1997, "Digital Image Halftoning As 2-D Delta-Sigma Modulation", IEEE Int. Conf. on Image Processing, Santa Barbara, California USA.
145. September 29, 1997, "Digital Image Halftoning as 2-D Delta-Sigma Modulation", Rose-Hulman Institute of Technology, Terre Haute, IN.
146. July 16, 1997, "Trends in Computer-Aided Design for Signal Processing Systems", Laboratory for Video and Image Engineering, The University of Texas at Austin, Austin, Texas USA.
147. June 12, 1997, "Delta-Sigma Analysis of Image Halftoning by Error Diffusion", Lucent Bell Laboratories, Holmdel, NJ.

148. June 10, 1997, "Signal Modeling", Guest Lecture for EE381K-9 Advanced Signal Processing, The University of Texas at Austin, Austin, Texas USA.
149. June 5, 1997, "An Introduction to Advanced Signal Processing", Guest Lecture for EE381K-9 Advanced Signal Processing, The University of Texas at Austin, Austin, Texas USA.
150. May 9, 1997, "Delta-Sigma Analysis of Image Halftoning by Error Diffusion", Georgia Institute of Technology, Atlanta, Georgia USA.
151. April 22, 1997, "Signal Processing System Design", Guest Lecture for EE382C Methodology for Hardware/Software Codesign, The University of Texas at Austin, Austin, Texas USA.
152. March 17, 1997, "Error Diffusion as Delta-Sigma Modulation for Digital Image Halftoning", HP Research Laboratories, Palo Alto, California USA.
153. March 14, 1997, "Web-Based Simulators for Embedded Software for Digital Signal Processors", Ptolemy Miniconference, University of California at Berkeley, Berkeley, California USA.
154. February 28, 1997, "Software Development in the Unix Environment", Electrical and Computer Engineering Departmental Seminar, The University of Texas at Austin, Austin, Texas USA.
155. February 20, 1997, "The Role of Symbolic Computation in Signal Processing System Design", Crystal Semiconductor, Austin, Texas USA.
156. November 19, 1996, "An Algebraic Approach to Multi-Frame Blind Deconvolution", Smart Sensors for Space & Airborne Applications Workshop, Kirkland Air Force Base, NM.
157. November 19, 1996, "AM-FM Image Analysis", Smart Sensors for Space & Airborne Applications Workshop, Kirkland Air Force Base, NM.
158. November 6, 1996, "Optimization of Signal Processing Algorithms", Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, California USA.
159. October 18, 1996, "Software Development in the Unix Environment", Electrical and Computer Engineering Department Seminar, The University of Texas at Austin, Austin, Texas USA.
160. June 25, 1996, "Highlights of the Workshop on a Common Operating Environment for Signal Processing", Ptolemy Project Group Meeting, University of California at Berkeley, Berkeley, California USA.
161. June 12, 1996, "Overview of the Ptolemy Project", Joint Services Workshop for a Common Signal Processing Operating Environment, Georgia Institute of Technology, Atlanta, Georgia USA.
162. June 10, 1996, "Overview of the Ptolemy Project", Industrial Liaison Program Conference, University of California at Berkeley, Berkeley, California USA.
163. May 8, 1996, "Real-Time DSP for Sophomores", IEEE Int. Conf. on Acoustics, Speech, and Signal Proc., Atlanta, Georgia USA.
164. April 30, 1996, "The Role of Symbolic Computation in Signal Processing System Design", MicroUnity, Mountain View, California USA.
165. April 21, 1996, "The Role of Symbolic Computation in Signal Processing System Design", University of British Columbia, Vancouver, Canada.

166. April 17, 1996, "The Role of Symbolic Computation in Signal Processing System Design", Catholic University of America, Washington, District of Columbia USA.
167. April 15, 1996, "The Role of Symbolic Computation in Signal Processing System Design", Pennsylvania State University, University Park, Pennsylvania USA.
168. April 12, 1996, "The Role of Symbolic Computation in Signal Processing System Design", University of Maryland, College Park, Maryland USA.
169. April 11, 1996, "The Role of Symbolic Computation in Signal Processing System Design", Virginia Polytechnic Institute and State University, Blacksburg, Virginia USA.
170. April 9, 1996, "The Role of Symbolic Computation in Signal Processing System Design", Dartmouth College, Hanover, New Hampshire USA.
171. April 8, 1996, "Theory and Implementation of Multirate Digital Signal Processing Systems", Dartmouth College, Hanover, NH.
172. April 4, 1996, "The Role of Symbolic Computation in Signal Processing System Design", UCLA, Los Angeles, California USA.
173. March 29, 1996, "The Role of Symbolic Computation in Signal Processing System Design", University of Rochester, Rochester, New York USA.
174. March 25, 1996, "The Role of Symbolic Computation in Signal Processing System Design", The University of Texas, Austin, Texas USA.
175. January 26, 1996, "Mathematica and the Ptolemy/Mathematica Interface", DSP Design Group Meeting, University of California at Berkeley, Berkeley, California USA.
176. November 16, 1995, "Filter Design in MATLAB and Mathematica", DSP Design Group Meeting, University of California at Berkeley, Berkeley, California USA.
177. November 9, 1995, "MATLAB and the Ptolemy/MATLAB Interface", DSP Design Group Meeting, University of California at Berkeley, Berkeley, California USA.
178. May 1995, "Integrating Analysis, Simulation, and Implementation Tools in Electronic Courseware for Teaching Signal Processing", IEEE Int. Conf. on Acoustics, Speech, and Signal Proc., Detroit, MI.

## Patents

- Matthew D. Felder, James C. Mason, and Brian L. Evans, *Efficient Digital ITU-Compliant, Zero-Buffering, DTMF Detection Using the Non-Uniform Discrete Fourier Transform*, US Patent 6608896, issued Aug. 19, 2003, application number 10/021,397. Non-Confidential Specification Sheet. Patent sold to Mosaid Technologies Inc. in April 2007.
- Matthew D. Felder, James C. Mason, and Brian L. Evans, *Efficient Digital ITU-Compliant, Zero-Buffering, DTMF Detection Algorithm Using the Non-Uniform Discrete Fourier Transform*, US Patent 6370244, issued Apr. 9, 2002, application number 09/054,872. Non-Confidential Specification Sheet. Patent sold to Mosaid Technologies Inc. in April 2007.

## Copyrighted Software

- J. Choi and B. L. Evans, *Two-Stage Analog Beamforming*, copyright © 2019 by The University of Texas. MATLAB code to accompany the paper “Two-Stage Analog Combining in Hybrid Beamforming Systems with Low-Resolution ADCs” published in *IEEE Transactions on Signal Processing* in May 2019. Software release is version 1.0 (July 27, 2019).
- J. Choi and B. L. Evans, *Resolution-Adaptive Hybrid MIMO Architectures for Millimeter Wave Communications*, copyright © 2017–2018 by The University of Texas. MATLAB code to accompany a paper of the same title published in the *IEEE Transactions on Signal Processing* in Dec. 2017. Software release is version 1.0 (Nov. 15, 2018).
- J. Choi and B. L. Evans, *Antenna Selection for Millimeter Wave (mmWave) Cellular Systems (New Radio)*, copyright © 2017–2018 by The University of Texas. These software releases in MATLAB accompany various publications.
  - *Antenna Selection for Large-Scale MIMO Systems with Low-Resolution ADCs with Online Training of the Quantizer Model*, Version 2.0 (February 16, 2018). Variation on the Version 1.0 release for the ICASSP 2018 paper below. The MMSE quantizer model is updated at each transmission and selection.
  - *Antenna Selection for Large-Scale MIMO Systems with Low-Resolution ADCs with Offline Training of the Quantizer Model*, Variation on the Version 1.0 release for the ICASSP 2018 paper below. The MMSE quantizer model is updated only once for the given simulation environment.
  - *Antenna Selection for Large-Scale MIMO Systems with Low-Resolution ADCs*, to accompany a paper of the same title in the 2018 IEEE International Conference on Acoustics, Speech and Signal Processing. Version 1.0 (October 27, 2017).
- *Channel Estimation for Hybrid Beamforming Millimeter Wave Communication Systems*, copyright © 2017–2019 by The University of Texas. These software releases in MATLAB accompany various publications.
  - J. Sung, *Hybrid Beamformer Codebook Design and Ordering for Compressive mmWave Channel Estimation*.
  - J. Sung, *Versatile Compressive mmWave Hybrid Beamformer Codebook Design Framework*.
  - J. Sung, J. Choi, and B. L. Evans, *Narrowband Channel Estimation for Hybrid Beamforming Millimeter Wave Communication Systems with One-Bit Quantization*. MATLAB code to accompany a paper of the same title in the 2018 IEEE International Conference on Acoustics, Speech, and Signal Processing. Version 1.0 (October 27, 2017).
  - J. Sung, J. Choi, and B. L. Evans, *Wideband Millimeter Wave Channel Estimation Algorithms*. MATLAB code for wideband channel estimation algorithms for hybrid beamforming millimeter wave communication systems with low-resolution analog-to-digital converters (ADCs). Version 1.0 (October 13, 2017).
- Y. F. Choo and B. L. Evans, *Complex Block Floating-Point Format with Box Encoding For Wordlength Reduction in Communication Systems*, copyright © 2017 by The University of Texas. MATLAB code to accompany a paper for the 2017 Asilomar Conference Signals, Systems and Computers. Software release is version 1.0 (October 16, 2017).

- J. Choi and B. L. Evans, *User Scheduling Algorithms for Millimeter Wave MIMO Systems* [http://users.ece.utexas.edu/~bevans/projects/mimo/software/user/UserSchedulingMIMO1\\_0.zip](http://users.ece.utexas.edu/~bevans/projects/mimo/software/user/UserSchedulingMIMO1_0.zip), copyright © 2017 by The University of Texas. MATLAB code to accompany a paper of the same title in the 2018 IEEE International Conference on Communications. Software release is version 1.0 (October 13, 2017).
- J. Sung and B. L. Evans, *Real-Time Testbed for Simultaneous Powerline and Wireless Smart Grid Communications*, copyright © 2017 by The University of Texas. The release includes National Instruments LabVIEW software to simultaneously transmit and receive on a powerline channel and a wireless channel to improve reliability in the received data. The software will run on a wide variety of NI hardware, and the software release includes a description of the hardware setup used in our testbed. Version 2.0 (March 29, 2017).

<http://users.ece.utexas.edu/~bevans/projects/plc/software/testbed/index.html>

- Debarati Kundu, Deepti Ghadiyaram, Alan C. Bovik and Brian L. Evans, *ESPL-LIVE High Dynamic Range Image Database*, copyright © 2016 by The University of Texas. This database contains 1811 high-dynamic range (HDR) images that have been mapped to standard dynamic range images for viewing on standard smart phone and laptop displays. HDR images represent each color value at each pixel as a floating-point number so as to provide a much wider dynamic range of color intensities. The database also contains 300,000+ visual assessment opinion scores from 5,000+ unique observers from a large-scale crowdsourced study. Version 1.0 (May 25, 2016) is available at

<http://signal.ece.utexas.edu/~debarati/ESPL-LIVE-HDR-Database/index.html>

- Jinseok Choi and Brian L. Evans, *Space-Time Baseband LTE Compression Software*, copyright © 2016 by The University of Texas. This MATLAB release implements algorithms to compress uplink baseband cellular LTE signals received by an antenna array. Version 1.0 (April 4, 2016) is available at

<http://www.ece.utexas.edu/~bevans/papers/2016/LTEcompression/BasebandLTECompression.zip>.

- Debarati Kundu and Brian L. Evans, *Full-Reference High Dynamic Range Image Quality Assessment*, copyright © 2016 by The University of Texas. This MATLAB release provides several automated visual quality evaluation methods for high-dynamic range (HDR) images. HDR images represent each color value at each pixel as a floating-point number so as to provide a much wider dynamic range of color intensities. Version 1.0 (January 20, 2016) is available at

<http://signal.ece.utexas.edu/~bevans/HDRImaging>.

- Debarati Kundu and Brian L. Evans, *ESPL Synthetic Image Database*, copyright © 2014–2015 by The University of Texas. Database contains 525 computer graphics images (25 source images with 20 distorted versions of each) and 26,000 visual assessment opinion scores from a controlled study involving 60 subjects. Version 2.0 (January 30, 2015) is available at

<http://signal.ece.utexas.edu/~bevans/synthetic>

- Gregory E. Allen, John F. Bridgman and Brian L. Evans, *Computational Process Networks*, copyright © 2000–2014 by The University of Texas. This C++ implementation provides a portable, high-performance, scalable framework using POSIX Threads of the Computational Process Networks model for real-time high-throughput signal and image processing. Release includes 330 files with 30,000 lines of code. Sixth major release (June 17, 2014) is available at

<https://bitbucket.org/gallen/cpn>.

- Chao Jia and Brian L. Evans, *Online Calibration and Synchronization of Rolling Shutter Camera and Gyroscope Toolbox for MATLAB*. Release contains an algorithm for online calibration and synchronization of cellphone (video) camera and gyroscope. The calibration parameters include camera focal length, camera principal point, rolling shutter readout time, gyroscope bias, relative orientation between camera and gyroscope, and delay between the timestamps of video and gyroscope readings. First major release (October 15, 2013) is available at  
<http://users.ece.utexas.edu/~bevans/projects/dsc/software/calibration/>.
- Karl F. Nieman, Marcel Nassar, Jing Lin and Brian L. Evans, Approximate Message Passing (AMP) Receiver. Release contains an AMP algorithm for decoding complex-valued orthogonal frequency division multiplexing (OFDM) signals. The algorithm estimates the impulsive noise observed on the null tones at the receiver to subtract out an estimate of the impulsive noise in the current OFDM frame. The AMP algorithm models the impulsive noise using a two-term Gaussian mixture model. Version 1.0 (June 5, 2013) contains two components:
  - LabVIEW project containing DSP Diagrams and Virtual Instruments (VIs) for mapping the GAMP transceiver onto three FPGAs (46 MB)
  - MATLAB code for converting the receiver from floating-point to fixed-point data and arithmetic (5 kB)
- Chao Jia and Brian L. Evans, *Constrained 3D Rotation Smoothing Toolbox for MATLAB* This Matlab software implements methods for stabilizing video taken by a handheld camera. First major release (April 9, 2013) is available at  
<http://users.ece.utexas.edu/~bevans/projects/dsc/software/motionSmoothing/>.
- Chao Jia and Brian L. Evans, *Rolling Shutter Video Rectification Toolbox for MATLAB* This Matlab and C software implements methods for reducing rolling shutter artifacts in CMOS cameras found in smart phones and other handheld devices. First major release (October 15, 2012) is available at  
<http://users.ece.utexas.edu/~bevans/projects/dsc/software/rollingShutter/>.
- Kapil Gulati, Marcel Nassar, Aditya Chopra, Nnaemeka Ben Okafor, Marcus R. DeYoung, Navid Aghasadeghi, Arvind Sujeeth, and Brian L. Evans, *Radio Frequency Interference Modeling and Mitigation Toolbox in MATLAB*, copyright © 2006–2011 by The University of Texas. This toolbox provides a simulation environment for generating radio frequency interference (RFI) and quantifying the performance of algorithms for parameter estimation and interference mitigation. Release includes 56 files with 10,280 lines and 430 kB of Matlab code. Version 1.6 (April 1, 2011) is available at  
<http://www.ece.utexas.edu/~bevans/projects/rfi/software>.
- Vishal Monga, Divyanshu Vats, and Brian L. Evans, *Matlab Image Hashing Toolbox*, copyright © 1999–2006 by The University of Texas. Toolbox contains several methods for computing a hash value (on the order of 100 bits) from images (on the order of 1 MB). The distance between hash values has a perceptual meaning of closeness in image features. Applications are in image authentication and image database indexing. Version 0.1 beta (June 18, 2006) is available at  
<http://www.ece.utexas.edu/~bevans/projects/hashing/toolbox/index.html>.
- Alex G. Olson, Daifeng Wang, Ian C. Wong, and Brian L. Evans, *ADSL2 Simulator*, copyright © 2005–2006 by The University of Texas. A discretized, physical layer, second-generation asymmetric digital subscriber line (ADSL) simulator for high-speed Internet access from the home and small

business. Simulator is in LabVIEW, but also exists as a standalone program. ADSL is more commonly known as DSL. The structure and default parameters of the transmitter, channel model, and receiver follow the ADSL2 ITU-T G.992.3 standard. Version 1.1 (May 24, 2006) is available at  
<http://www.ece.utexas.edu/~bevans/projects/adsl/simulator/index.html>.

- Kyungtae Han and Brian L. Evans, *Floating-Point to Fixed-Point Transformation Toolbox*, copyright © 2005–2006 by The University of Texas. This freely distributable toolbox automates conversion of floating-point programs to fixed-point programs and quantifies the tradeoff in signal quality vs. implementation complexity in fixed-point wordlength choices. One application of this toolbox is to reduce the power consumed by existing algorithms in an embedded software or hardware implementation. Version 1.1 (May 22, 2006) is available at  
<http://www.ece.utexas.edu/~bevans/projects/wordlength/converter/index.html>.
- Vishal Monga, Niranjan Damera-Venkata, Hamood-ur Rehman, and Brian L. Evans, *Matlab Halftoning Toolbox*, copyright © 1999–2005 by The University of Texas. Collection of grayscale and color image halftoning methods for printing and displaying images, and figures of merit for evaluation of image halftoning methods. Used by more than 60 companies and universities. Version 1.2 (July 25, 2005) is available at  
<http://www.ece.utexas.edu/~bevans/projects/halftoning/toolbox/index.html>.
- Mayank Gupta and Brian L. Evans, *Rule-Of-Thirds Automation for Digital Still Cameras*, copyright © 2004 by The University of Texas. Automation of the rule-of-thirds photographic composition rule during image acquisition in C for desktop and digital signal processors. Version 0.1 beta (June 12, 2004) is available at  
[http://www.ece.utexas.edu/~bevans/projects/dsc/software/RuleOfThirds0\\_1beta.zip](http://www.ece.utexas.edu/~bevans/projects/dsc/software/RuleOfThirds0_1beta.zip).
- Serene Banerjee and Brian L. Evans, *Smart Image Acquisition for Digital Still Cameras*, Automation of photographic composition rules during image acquisition in Matlab. Version 1.0 Beta (February 15, 2004) is available at  
[http://www.ece.utexas.edu/~bevans/projects/dsc/software/SmartCamera1\\_0.zip](http://www.ece.utexas.edu/~bevans/projects/dsc/software/SmartCamera1_0.zip).
- Güner Arslan, Ming Ding, Biao Lu, Milos Milosevic, Zukang Shen, and Brian L. Evans, *Matlab Discrete Multitone Equalizer Toolbox*, copyright © 2000–2003 by The University of Texas. Graphical user interface and functions in Matlab to design four different multicarrier equalizer structures: conventional, dual-path, per tone, and filter bank. Dual-path and filter bank equalizers were proposed by Evans *et al.* Several training methods implemented: thirteen for conventional, two for dual-path, two for per tone, and one for filter bank equalizers. Default parameters are from the G.DMT ADSL standard for downstream transmission. Version 3.1 (May 10, 2003) is available at  
<http://www.ece.utexas.edu/~bevans/projects/adsl/dmtteq/dmtteq.html>.
- Dogu Arifler, Chi Duong, Brian L. Evans, Srikanth Gummadi, Saleem K. Marwat, Chris M. Moy, and Anna Yuan, *Web-Enabled Simulation*, copyright © 1996–2001 by The University of Texas. An extensible and portable framework for Web-enabled interfaces to simulators and debuggers. The framework consists of a configurable graphical user interface (Java applets), a multithreaded TCP/IP Server written (Java application), TMS320C30 digital signal processor, MC68HC11 microcontroller, and MC58800 digital signal processor simulators (C/C++), and a debugger for a MC58800 digital signal processor board. Consists of 148 files containing 54,000 lines and 1.7 Mb of C, C++, and Java source code. Version 1.3.0 (May 18, 2001) is available at

<http://signal.ece.utexas.edu/~arifler/wetics/index.html>.

- Niranjan Damera-Venkata and Brian L. Evans, *Image Quality Assessment*, copyright © 2001 by The University of Texas. Matlab files to compute linear and nonlinear quality measures when comparing an original to a processed image. Version 1.0 (April 28, 2001) is available at  
[http://signal.ece.utexas.edu/software/imageQuality/quality1.0/ImageQuality1\\_0.zip](http://signal.ece.utexas.edu/software/imageQuality/quality1.0/ImageQuality1_0.zip)
- Niranjan Damera-Venkata and Brian L. Evans, *Filter Optimization Packages for MATLAB and Mathematica*, copyright © 1993–1998 by the Regents of the University of California. Mathematica packages to generate MATLAB software to perform a joint optimization of several characteristics of analog infinite impulse response filters. Supported characteristics are magnitude response, phase response, step response, and quality factors. New characteristics can be easily added. Version 1.1 (June 23, 1998) is available at  
[http://www.ece.utexas.edu/~bevans/projects/filters/filter\\_design.html](http://www.ece.utexas.edu/~bevans/projects/filters/filter_design.html).
- Niranjan Damera-Venkata, Thomas D. Kite, and Brian L. Evans, *Fast Inverse Halftoning Algorithms*, copyright © 2001 by The University of Texas. Contains two fast inverse halftoning algorithms in C. Version 1.0 (June 21, 1998) is available at  
<http://www.ece.utexas.edu/~bevans/projects/inverseHalftoning.html>.
- Joseph T. Buck, Edward A. Lee, Brian L. Evans, Soonhoi Ha, David G. Messerschmitt, Thomas Parks, José L. Pino, and others. *Ptolemy Software Environment*, a graphical block diagram environment for specifying, simulating, and synthesizing signal processing and communications systems, copyright © 1990–1998 by Regents of the University of California. Runs on 12 different Unix architectures. Version 0.7.1, the seventh major version, was released on June 12, 1998. Between August 3, 1998, and February 23, 1999, Ptolemy 0.7.1 was downloaded 3135 times from 450 different Internet domains. Consists of 2700 files containing 440,000 lines and 11.4 Mb of C, C++, Tcl/Tk, and Java source code. Releases are available at  
<http://ptolemy.eecs.berkeley.edu/ptolemyclassic/pt0.7.1/>.
- Brian L. Evans and Steve X. Gu, *TMath*, a Tcl/C++ interface to Mathematica and MATLAB, copyright © by Regents of the University of California 1996. Runs on 10 different Unix architectures. Version 0.2 (released July 8, 1997) is available at  
<http://www.ece.utexas.edu/~bevans/projects/tmath.html>.
- Raza Ahmed and Brian L. Evans, *Heuristic Search Packages* for Mathematica, copyright © 1996 by Regents of the University of California. A general framework for applying transformation rules to minimize the cost of implementation of algebraic expressions. Available at  
<http://www.mathsource.com/cgi-bin/MathSource/Applications/ComputerScience/0208-044>.
- Brian L. Evans and John M. Novak, *Signals and Systems Pack*, Wolfram Research Inc., October 15, 1995. Contains the Signal Processing Packages (see below) plus 200 pages of documentation. More than 10,000 copies sold.
- Brian L. Evans, Steve X. Gu, Edward A. Lee, and Philip Chen, *Mathematica Notebooks to Accompany Contemporary Linear Systems Using MATLAB*, PWS Publishing Company, ISBN 0-534-93509-5 (PC) and 0-534-93507-9 (Mac), June, 1995. Interactive solution sets containing the Signal Processing Packages (see below) plus introductory electronic notebooks and a “tutoring” and a “solutions”

electronic notebook for each chapter of Robert D. Strum and Donald E. Kirk, *Contemporary Linear Systems Using MATLAB*, PWS Publishing Company, ISBN 0-534-94710-7, 1995.

- Brian L. Evans, James H. McClellan, Joseph M. Winograd, Lina J. Karam, Robert H. Bamberger, Wallace B. McClure, and Kevin B. West, *Signal Processing Packages and Notebooks for Mathematica*, copyright © by Georgia Tech Research Corporation, 1989–1998. Runs in Mathematica 2.x. Version 2.9.5 is available by FTP from [ftp.eedsp.gatech.edu](ftp://ftp.eedsp.gatech.edu). Downloaded by over 1000 sites. Packages consist of 42 files containing 1 Mb of Mathematica source code. Notebooks serve as on-line tutorials.

## Projects Funded

- Since September 1, 1996, funded projects have totaled \$4,903,235 with \$4,486,017 from external and \$417,218 from internal sources. Project funding that has gone directly to my research group totals \$3,961,628.
  - Individual Projects
    - \$ 49,000, 9/1/17 – 8/31/24, Engineering Foundation Professorship, Renewal, College of Engineering, The University of Texas, Austin, TX 78712.
    - \$ 16,000, 9/1/17 – 8/31/18, *Communication Systems Research*, Wireless Networking and Communications Group, The University of Texas at Austin, Austin, TX.
    - \$120,000, 6/1/18 – 5/31/19, *Massive MIMO Cost Reduction*, Futurewei, Dallas, TX.
    - \$ 99,000, 11/1/16 – 10/31/17, *Mixed Resolution ADC for Massive MIMO Systems*, Huawei, Dallas, TX.
    - \$ 18,000, 11/1/16 – 10/31/17, *Communication Systems Research*, a no-overhead unrestricted gift from National Instruments, Austin, TX.
    - \$ 49,000, 9/1/10 – 8/31/17, Engineering Foundation Professorship, College of Engineering, The University of Texas, Austin, TX 78712.
    - \$ 20,000, 6/1/15 – 5/31/16, *Communication Systems Research*, no-overhead funding from the Wireless Networking and Communications Group, The University of Texas at Austin, Austin, TX.
    - \$ 20,000, 6/1/14 – 5/31/15, *Communication Systems Research*, no-overhead funding from the Wireless Networking and Communications Group, The University of Texas at Austin, Austin, TX.
    - \$ 21,000, 6/1/13 – 5/31/14, *Communication Systems Research*, no-overhead funding from the Wireless Networking and Communications Group, The University of Texas at Austin, Austin, TX.
    - \$300,000, 8/1/10 – 7/31/13, *Powerline Communications for Enabling Smart Grid Applications*, Task 1836.036, Global Research Collaboration, Semiconductor Research Corporation, Research Triangle Park, NC. Industrial liaisons are Freescale Semiconductor, IBM, and Texas Instruments.
    - \$ 40,000, 1/1/13 – 6/30/13, *Wireless Communications Research*, a no-overhead unrestricted gift from Azimuth Systems, Boston, MA.
    - \$ 35,000, 1/1/12 – 12/31/12, *Digital Video Processing Research*, a no-overhead unrestricted gift from Texas Instruments, Dallas, TX.
    - \$220,000, 9/1/07 – 8/31/14, *Communication Systems Research*, a no-overhead unrestricted gift from National Instruments, Austin, TX.

- \$ 20,000, 9/1/11 – 12/31/12, *Communication Systems Research*, no-overhead funding from the NSF WiCAT Center, Wireless Networking and Communications Group, The University of Texas at Austin, Austin, TX.
- \$ 50,000, 9/1/10 – 8/31/11, *Radio Frequency Interference Sensing and Mitigation in Wireless Transceivers*, a no-overhead unrestricted gift from Intel, Portland, OR.
- \$110,000, 2/1/10 – 5/31/11, *Radio Frequency Interference Sensing and Mitigation in Wireless Transceivers*, a no-overhead unrestricted gift from Intel, Portland, OR.
- \$ 60,000, 9/1/06 – 12/31/11, *Wireless Communications Research*, a no-overhead unrestricted gift from the Wireless Networking and Communications Group, The University of Texas at Austin, Austin, TX.
- \$110,000, 9/1/09 – 8/31/10, *Radio Frequency Interference Sensing and Mitigation in Wireless Transceivers*, a research contract from Intel, Portland, OR.
- \$150,000, 12/6/06 – 8/31/09, *In-Platform Radio Frequency Interference Mitigation for Wireless Communications*, a no-overhead unrestricted gift from Intel, Portland, OR.
- \$440,000, 10/3/06 – 8/31/10, *Communications Systems*, Sponsored Research Project, Schlumberger, Sugar Land, TX.
- \$ 15,000, 1/16/08 – 5/31/08, *Image Processing Research*, a no-overhead unrestricted gift from Qualcomm MEMS Technologies, San Jose, CA.
- \$ 50,000, 1/1/05 – 12/31/05, *Embedded Real-Time Signal Processing*, a no-overhead unrestricted gift from an anonymous donor.
- \$ 55,000, 1/1/05 – 12/31/06, *Communications Systems*, a no-overhead unrestricted gift from Schlumberger, Sugar Land, TX.
- \$ 4,500, 9/1/04 – 8/31/05, Robert and Jane Mitchell Faculty Fellowship, College of Engineering, The University of Texas, Austin, TX 78712.
- \$ 16,000, 8/24/04 – 8/31/05, *Real-Time Imaging Projects*, a no-overhead unrestricted gift from Intel Academic Relations, Portland, OR.
- \$ 48,185, 3/1/04 – 12/31/04, *Real-Time Imaging Projects*, Intel Academic Relations Equipment Grant, Portland, OR.
- \$ 50,000, 1/1/04 – 12/31/04, *Embedded Real-Time Signal Processing*, a no-overhead unrestricted gift from an anonymous donor.
- \$ 60,000, 1/1/04 – 12/31/06, *Robust Perceptual Image Hashing*, a no-overhead unrestricted gift from Xerox Foundation, Webster, NY.
- \$ 2,179, 9/1/03 – 8/31/04, Mrs. Pearlie Dashiell Henderson Centennial Faculty Fellowship, College of Engineering, The University of Texas, Austin, TX 78712.
- \$ 50,000, 1/1/03 – 12/31/03, *Embedded Real-Time Signal Processing*, a no-overhead unrestricted gift from an anonymous donor.
- \$ 42,000, 9/1/02 – 1/15/03, *Optimizing Communication Speed of ADSL and VDSL Modems for High-Speed Internet Access*, Faculty Research Assignment Award, The University of Texas at Austin, Austin, TX 78712.
- \$ 4,000, 9/1/02 – 8/31/03, Mrs. Pearlie Dashiell Henderson Centennial Faculty Fellowship, College of Engineering, The University of Texas, Austin, TX 78712.
- \$178,485, *Equipment Grant to Upgrade the Real-Time Digital Signal Processing Laboratory and Senior Design Courses*, University Program, Texas Instruments, Houston, TX 77251.

- \$ 35,000, 9/1/01, *ADSL/VDSL Transceiver Design*, a no-overhead unrestricted gift from Motorola, Inc., Austin, TX, 78704.
- \$ 3,000, 9/1/01, Mrs. Pearlie Dashiell Henderson Centennial Faculty Fellowship, College of Engineering, The University of Texas, Austin, TX 78712.
- \$ 9,960, 7/12/01, *Equipment Grant for a Real-Time Digital Signal Processing Laboratory and Senior Design Courses*, University Program, Texas Instruments, Houston, TX 77251.
- \$ 35,000, 9/1/00, *ADSL/VDSL Transceiver Design*, a no-overhead unrestricted gift from Motorola, Inc., Austin, TX, 78704.
- \$ 5,139, 9/1/00, Mrs. Pearlie Dashiell Henderson Centennial Faculty Fellowship, College of Engineering, The University of Texas, Austin, TX 78712.
- \$ 13,950, 7/10/00, *Equipment Grant for a Real-Time Digital Signal Processing Laboratory and Senior Design Courses*, University Program, Texas Instruments, Houston, TX 77251.
- \$ 16,600, 4/26/00, *Equipment Grant for Video Codec Development*, University Program, Texas Instruments, Houston, TX 77251.
- \$ 9,000, 9/1/99, *Curriculum Development Grant*, Texas Telecommunications Engineering Consortium, College of Engineering, The University of Texas at Austin, Austin, TX 78712.
- \$ 9,000, 11/1/99, *Color Image Halftoning Research*, a no-overhead unrestricted gift from Hewlett Packard Laboratories, Palo Alto, CA 94304, through their Imaging Technology Department.
- \$ 10,000, 9/1/99, *Neural Networks Channel Equalizer Using Altera FPGAs*, University Program, Altera, San Jose, CA 95134.
- \$ 19,450, 6/24/99, *Equipment Grant for a Real-Time Digital Signal Processing Laboratory and Senior Design Courses*, University Program, Texas Instruments, Houston, TX 77251.
- \$ 5,000, 6/1/99, *WebCT Instruction for Telecommunication Systems Courses*, Academic Development Grant, College of Engineering, The University of Texas at Austin, Austin, TX 78712.
- \$ 20,000, 6/1/99, *Modern Digital Signal Processing Architectures for Halftoning*, a no-overhead unrestricted gift from Hewlett Packard Laboratories, Palo Alto, CA 94304, through their Imaging Technology Department.
- \$ 9,500, *Curriculum Development Grant*, Texas Telecommunications Engineering Consortium, College of Engineering, The University of Texas at Austin, Austin, TX 78712.
- \$ 4,000, *Faculty Incentive Grant*, Texas Telecommunications Engineering Consortium, College of Engineering, The University of Texas at Austin, Austin, TX 78712.
- \$ 15,000, 1/1/98, *Video Processing Research*, a no-overhead unrestricted gift from Accelerix, Inc., 11000 N. Mopac Expressway, Austin, TX 78759.
- \$210,000, 9/1/97 – 8/31/01, *Scalable Software and Hardware for Image and Video Processing Systems*, NSF CAREER Award, MIP-9702707, National Science Foundation, Arlington, Virginia 22230.
- \$ 84,172, 6/1/97 – 11/1/99, *Design of Distributed Adaptive Signal Processing Systems*, DARPA Composite CAD Program, Contract DAAB07-97-C-J007, Electronic Technology Office, Defense Advanced Projects Research Agency, Arlington, Virginia 22203-1714, subcontract from the Sponsored Projects Office, University of California, Berkeley, CA 94720.
- \$ 20,000, 6/1/97 – 8/31/00, *Equipment Grant for a Real-Time Digital Signal Processing Laboratory Course*, University Program, Texas Instruments, Houston, TX 77251.

- \$ 14,400, 6/1/97 – 7/31/97, *Scalable Software for Image and Video Processing Systems*, Summer Research Assignment Grant, The University of Texas at Austin, Austin, TX 78712.
- \$ 10,000, 9/1/96 – 8/31/97, *Signal Processing Research*, a no-overhead unrestricted gift from the Shell Oil Company Foundation, Bellaire Technology Center, Houston, TX 77025.
- \$ 4,500, 9/1/96 – 8/31/98, *A Real-Time Digital Signal Processing Laboratory*, Academic Development Grant, College of Engineering, The University of Texas at Austin, Austin, TX 78712.
- \$ 5,000, 9/1/96 – 8/31/97, *Design and Implementation of Signal Processing Systems*, Research Initiation Award In Engineering, Bureau of Engineering Research, The University of Texas at Austin, Austin, TX 78712.
- \$ 50,000, 9/1/96 – 8/31/98, *Embedded Systems Research*, Equipment Grant, College of Engineering, The University of Texas at Austin, Austin, TX 78712.

- Joint Projects

- \$360,000, 2/1/14 – 1/31/17, *Energy-Efficient Signal Processing Techniques for Smart Grid Heterogeneous Communications Networks*, Global Research Collaboration, Semiconductor Research Corporation, Research Triangle Park, NC. Industrial liaisons are Freescale Semiconductor and Texas Instruments. Principal Investigator is Prof. Naofal Al-Dhahir at The University of Texas at Dallas.
- \$160,000, 1/1/14 – 5/31/15, *Cloud Radio Access Networks*, Huawei, Dallas, TX. Principal Investigator is Robert W. Heath, Jr..
- \$240,000, 9/1/12 – 12/31/13, *Cloud Radio Access Networks*, Huawei, Dallas, TX. Principal Investigator is Robert W. Heath, Jr.. Other Co-Investigators are Prof. Mattan Erez and Prof. Gustavo de Veciana.
- \$127,500, 1/1/02 – 12/31/03, *DSL to 802.11 Bridge: Enabling High-Speed Wireless Internet Access at Home and Small Offices*, The State of Texas Advanced Technology Program, Division of Research, Planning and Finance, Texas Higher Education Coordinating Board, P. O. Box 12788, Austin, TX 78711-2788. Co-Principal Investigator is Robert W. Heath, Jr..
- \$ 10,000, 1/15/00 – 12/31/01, *Biomedical Image Analysis*, a no-overhead unrestricted gift from Perceptive Scientific Instruments, League City, TX 77573. Co-principal investigator is Prof. Alan C. Bovik.
- \$198,700, 1/15/00 – 12/31/01, *Foveated Wireless Video Communication*, The State of Texas Advanced Research Program, Division of Research, Planning and Finance, Texas Higher Education Coordinating Board, P. O. Box 12788, Austin, TX 78711-2788 Principal investigator is Prof. Alan C. Bovik.
- \$198,712, 1/15/00 – 12/31/01, *Standards-Compliant High-Quality Low-Bitrate Wireless Video Communications Using TMS320C6x and TMS320C54x Processors*, Texas Instruments DSP R&D Fund, Houston, TX 77251. Principal investigator is Prof. Alan C. Bovik.
- \$ 63,303, 6/1/98 – 5/31/99, *Loop Filter Development Project*, Semiconductor Products Sector Sponsored Research Project, Motorola, Inc., Austin, TX, 78704. Co-principal investigator is Prof. Takis Konstantopoulos.
- \$ 25,000, 6/1/98 – 5/31/99, *Automatic Integration of Intellectual Property Cores*, a no-overhead unrestricted gift from the Rockwell Semiconductor Systems, Newport Beach, CA 92658. Co-principal investigator is Prof. Margarida Jacome.

- \$250,000, 9/1/97 – 8/31/00, *Digital Video Telecommunications Research and Teaching in the Laboratory for Image and Video Engineering*, co-principal investigator with Alan C. Bovik, which was part of a \$6,000,000 university equipment infrastructure grant entitled *High-Performance Computing at the University of Texas at Austin* funded by the Utilization of Advanced Intel Based Platforms in Computationally Demanding Tasks Program, Academic Relations, Intel Corporation, Hillsboro, OR 97124-6497.
- \$ 15,000, 9/1/97, *Image Halftoning Research*, a no-overhead unrestricted gift from Hewlett Packard Laboratories, Palo Alto, CA 94304, through their Imaging Technology Department. Co-principal investigator with Alan C. Bovik.
- \$115,000, 6/1/97 – 5/31/00, *AM-FM Analysis of Images and Video*, co-principal investigator with Alan C. Bovik, Augmentation Awards for Science and Engineering Research Training, Air Force Office of Scientific Research, Bolling Air Force Base, D.C. 20332-80801.

## Continuing Education

- Completed an eight-hour Mental Health First Aid training session by Integral Care (Travis County Counseling and Mental Health Center) on the UT Austin campus in December 2019. The training is to “provide initial help to people experiencing problems such as depression, anxiety disorders, psychosis, and substance use disorders”. The program has been developed by the National Council for Behavioral Health.
- Completed The University of Texas Executive Management and Leadership Program by attending 8 of the 9 half-day sessions in Spring 2019. Sessions attended: (1) Power and Networks, (2) Leaders as Agents of Change, (3) Human Resources, (4) Negotiation Skills, (5) Finance Foundations, (6) Managing People, (7) Emotional Intelligence, and (8) Advocacy for Leaders. Connected with a cohort of 30 other campus leaders participating in the program.
- Founder and organizer (1996–2003) of a Wireless Networking and Communications Seminar in the Dept. of ECE. This seminar series was funded by the Texas Telecommunications Engineering Consortium (2000–03) and Tivoli (2002–03). Seminar announcements were posted on the Web and to an e-mail list that included more than 50 people from local industry (AMD, Analog Devices, Cicada, Cirrus, Crystal, ESS Technology, IBM, I/O Systems, Motorola, National Instruments, SBC, Schlumberger, Shell, The Silicon Group, and Tracor). 200+ talks were presented in the series.
- Presented several training sessions at The University of Texas at Austin that were open to the public:
  - “Software Development in the Unix Environment”, November 10, 2000
  - “Software Development in the Unix Environment”, March 26, 1999
  - “Software Development in the Unix Environment”, January 23, 1998
  - “Software Development in the Unix Environment”, February 28, 1997
  - “Software Development in the Unix Environment”, October 18, 1996
- Instructor at the 1992, 1993, 1994, and 1995 *NSF Workshop on Revitalizing the Engineering, Mathematics, and Science Curricula Via Symbolic Algebra*, to teach professors how to develop new types of problems that students can work using the algebraic abilities of computer algebra systems

## Current Graduate Students

- Students admitted to candidacy

- Hugo A. Andrade
  - Jinseok Choi
  - Faris B. Mismar
  - Junmo Sung
- Post M.S. students
  - None
- M.S. in progress
  - Yunseong Cho
  - Scott E. Johnston

## Graduate Students Supervised

- Ph.D. Dissertations
  1. Faris B. Mismar, *Improving Next-Generation Wireless Network Performance and Reliability with Deep Learning*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Dec. 2019. **Currently** he is a Senior Manager of Radio Performance Services at Samsung in Dallas, Texas USA.
  2. Jinseok Choi, *Optimizing Communication Performance of Low-Resolution ADC Systems with Hybrid Beamforming*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Dec. 2019. **Currently** he is a Senior Engineer at the Qualcomm Research Center in San Diego, California USA.
  3. Debarati Kundu, *Subjective and Objective Quality Evaluation of Synthetic and High Dynamic Range Images*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 2016. **Currently** she is a Senior Lead Engineer at Qualcomm in Bengaluru, India.
  4. Yousof Mortazavi, *Analog-to-Digital Converter Circuit and System Design to Improve with CMOS Scaling*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 2015. **Currently** he is working as an Audio Architect at Ambiq Micro in Austin, Texas USA.
  5. Karl F. Nieman, *Space-Time-Frequency Methods for Interference-Limited Communication Systems*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Dec. 2014. **Currently** he is working as a Senior Wireless Platform Architect at National Instruments in Austin, Texas USA.
  6. Chao Jia, *Video Stabilization and Rectification for Handheld Cameras*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 2014. **Currently** he is working as a Software Engineer at Google Research in Mountain View, California USA.
  7. Jing Lin, *Robust Transceivers for Combating Impulsive Noise in Powerline Communications*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 2014. **Currently** she is working as a Senior System Engineer at Qualcomm in Santa Clara, California USA.

8. Kyle D. Wesson, *Secure Navigation and Timing Without Local Storage of Secret Keys*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 2014. **Currently** he is working as a Regulatory Engineer at Swarm Technologies in Mountain View, California USA.
9. Marcel Nassar, *Graphical Models and Message Passing Receivers for Interference Limited Communication Systems*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Aug. 2013. **Currently** he is working as a Data Scientist at Intel in San Diego, California USA.
10. Aditya Chopra, *Modeling and Mitigation of Interference in Wireless Receivers with Multiple Antennae*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Dec. 2011. **Currently** he is working as a Principal Member of Technical Staff at AT&T Labs in Austin, Texas USA.
11. Kapil Gulati, *Radio Frequency Interference Modeling and Mitigation in Wireless Receivers*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Aug. 2011. **Currently** he is working as a Staff Engineer at Qualcomm Corporate R&D in Bridgewater, New Jersey USA.
12. Gregory E. Allen, *Computational Process Networks: A Model and Framework for High-Throughput Signal Processing*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, Texas 78712, May 2011. **Currently** he is working as an Senior Engineering Scientist at the Applied Research Laboratories at The University of Texas in Austin, Texas USA.
13. Hamood-ur Rehman, *Artifact Assessment, Generation, And Enhancement Of Video Halftones*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, December 2010. **Currently** he is working as a Design Engineer at Avvasi in Waterloo, Ontario, Canada.
14. Ian C. Wong, *A Unified Framework for Optimal Resource Allocation in Multiuser Multicarrier Wireless Systems*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 2007. **Currently** he is working as the Senior Group Manager for Advanced Wireless Research at National Instruments in Austin, Texas USA.
15. Kyungtae Han, *Automating Transformations from Floating-point to Fixed-point for Implementing Digital Signal Processing Algorithms*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, August 2006. **Currently** he is working as a Principal Researcher at the Toyota InfoTech Labs in Mountain View, California USA.
16. Zukang Shen, *Multiuser Resource Allocation in Multichannel Wireless Communication Systems*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 2006. **Currently** he is working as a Senior Expert at Huawei in Beijing, China.
17. Vishal Monga, *Perceptually Based Methods for Robust Image Hashing*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Aug. 2005. **Currently** he is an Associate Professor in the Department of Electrical Engineering at the main campus of The Pennsylvania State University.
18. Serene Banerjee, *Composition-Guided Image Acquisition*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Aug. 2004. **Currently** she is a Senior Data Scientist at Ericsson Research in Bengaluru, India.
19. Ming Ding, *Channel Equalization to Achieve High Bit Rates In Discrete Multitone Systems*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin,

TX 78712, Aug. 2004. **Currently** he is a Principal DSP Engineer at Broadcom in San Jose, California USA.

20. Dogu Arifler, *Network Tomography Based on Flow Level Measurements*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 2004. **Currently** he is an Professor in the Dept. of Computer Engineering, at Eastern Mediterranean University in Famagusta, Cyprus.
21. Milos Milosevic, *Maximizing Data Rate of Discrete Multitone Systems using Time Domain Equalization Design*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 2003. Technical Report WNCG-TR-2003-05-02. **Currently** he is a Senior Director for TechnologyLandmark at Halliburton in Houston, Texas USA.
22. Wade C. Schwartzkopf, *Maximum Likelihood Techniques for Joint Segmentation-Classification of Multi-spectral Chromosome Images*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Dec. 2002. Technical report WNCG-TR-2002-12-06. **Currently** he is a Research Scientist at Integrity Applications Inc. in Chantilly, Virginia USA.
23. K. Clint Slatton, *Adaptive Multiscale Estimation for Fusing Image Data*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Dec. 2001. He was a tenured Associate Professor in the Department of Electrical and Computer Engineering at the University of Florida in Gainesville, Florida USA. Prof. Slatton won a 2007 Presidential Early Career Award in Science and Engineering (PECASE). Prof. Slatton died on March 30, 2010.
24. Güner Arslan, *Equalization for Discrete Multitone Transceivers*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Dec. 2000. **Currently** he is a Principal Systems Design Engineer at Silicon Labs in Austin, Texas USA.
25. Niranjan Damera-Venkata, *Analysis and Design of Vector Error Diffusion Systems for Image Halftoning*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Dec. 2000. **Currently** he is a Principal Scientist in the Multimedia Interaction and Understanding Laboratory at HP Research Labs in Palo Alto, California USA.
26. Biao Lu, *Wireline Channel Estimation and Equalization*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Dec. 2000. **Currently** she is a Senior Software Engineer at OpenSpirit Corp. in Sugar Land, Texas USA.
27. Murat Torlak, *Estimation and Capacity of Channels in Smart Antenna Wireless Communication Systems*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Aug. 1999. **Currently** he holds the rank of Professor in the Dept. of Electrical Engineering, at The University of Texas at Dallas, Richardson, Texas USA.
28. Thomas D. Kite, *Design and Quality Assessment of Forward and Inverse Error Diffusion Halftoning Algorithms*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Aug. 1998. His last position was as the Vice President of Engineering at Audio Precision in Beaverton, Oregon USA. Dr. Kite died on September 5, 2015.
29. Dong Wei, *Coiflet-Type Wavelets: Theory, Design, and Applications*, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Aug. 1998. **Currently** he was a Member of Technical Staff at at&t Research Labs in Austin, Texas USA.

- MS Reports & Theses

1. Yeong F. Choo, *Complex Block Floating-Point Format with Box Encoding in Communication Systems*, MSEE Report, Dept. of Electrical and Computer Engineering, The University of Texas

at Austin, Austin, TX 78712, May 2018. **Currently** he is a Member of Technical Staff at Fujitsu Network Communications, Plano, TX USA.

2. Matthew W. DeKoning, *Embedded Sensor Speed and Width Estimation*, MSEE Report, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Dec. 2017. **Currently** he is a Member of Technical Staff at Sandia National Laboratories in Albuquerque, NM USA.
3. Jeremy Gin, *Evaluation of Open-Source Intrusion Detection Systems for IPv6 Vulnerabilities in Realistic Test Network*, MSEE Report, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 2017. **Currently** he is a Member of Technical Staff at Sandia National Laboratories in Albuquerque, NM USA.
4. Ghadi Sebaali, *Performance Evaluation of Coexistence within Wireless Personal Area Networks*, MSEE Report, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 2016. **Currently** she is a Senior Consultant at Capgemini, San Francisco, TX USA.
5. Kenneth A. Perrine, *Design and Implementation of an Underwater Acoustic Transponder*, MSEE Report, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 2011. **Currently** he is a Research Associate in the Center for Transportation Research at The University of Texas at Austin in Austin, Texas USA.
6. Thomas P. Higdon, *The Implementation of a Sonar Beamformer on the Cell Broadband Engine*, MSEE Report, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 2008. **Currently** he works Software Engineer at Akamai Technologies in Boston, Massachusetts USA.
7. Jeffrey B. Livingston, *Time-Scale Modification of Audio Signals Using the Dual-Tree Complex Wavelet Transform*, MSEE Report, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, December 2006. **Currently** he works as a Design Engineer for Cirrus Logic in Austin, Texas USA.
8. Young H. Cho, *Implementation of a 3-D Sonar Beamformer Using the Computational Process Network Model on a Synergy Quad PowerPC G4 with AltiVec Board*, MSEE Report, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 2001. **Currently** he is a Research Assistant Professor and Research Scientist at UCLA, where he finished a PhD degree.
9. Norman K. James, *PLL Modelling Using Software Tools*, MSEE Report, Option III Executive Software Engineering Program, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Dec. 1999. **Currently** he works as a Phase Locked Loop Designer for Microprocessors at IBM in Austin, Texas USA.
10. Srikanth Gummadi, *Space-Time Processing for Wireless Base Stations*, MSEE Report, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Dec. 1998. **Currently** he is Vice President at Broadcom in Bangalore, India.
11. Gregory E. Allen, *Real-Time Sonar Beamforming on a Symmetric Multiprocessing Unix Workstations Using Process Networks and POSIX Pthreads*, MSEE Report, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, Aug. 1998. **Currently** he works as a Senior Engineering Scientist in the Advanced Technology Laboratory for the UT Applied Research Laboratories in Austin, Texas USA, and also finished a Ph.D.E.E. degree at UT Austin.

12. Amey A. Deosthali, *Embedded Signal Processing on Microcontrollers*, MSEE Report, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 1998. **Currently** he works as a Manager for Embedded Printing and Imaging Products at AMD in Austin, Texas USA.
13. Charles R. Powers, *A Review of Performance Analysis (Benchmarking) Approaches for Embedded Microprocessors and Microcontrollers*, MSEE Report, Option III Executive Software Engineering Program, Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712, May 1998. **Currently** he works as Director of Engineering and Technology Policy at Motorola Solutions in Washington, DC USA.

## Other Research Supervision

- Ph.D. Defense Committees (58): Taner Akkin, Dogu Arifler, Gregory E. Allen, Alberto Arredondo, Güner Arslan, Serene Banerjee, Ramya Bhagavatula, Gwangwoo “Johnny” Choe, Eun Ho Choi, Jinseok Choi, Aditya Chopra, Thayne R. Coffman, Niranjan Damera-Venkata, Ming Ding, Kurt A. Feiste, Kapil Gulati, Kyungtae Han, Chao Jia, Adnan Kavak, Ivy Kelly, Youngchun Kim, Youngok Kim, Thomas D. Kite, Hoojin Lee, Sanghoon Lee, Jing Lin, Shizhong Liu, Biao Lu, Anderson Mills, Milos Milosevic, Faris B. Mismar, Bishwarup Mondal, Vishal Monga, Yousof Mortazavi, Marcel Nassar, Richard Naethling, Karl F. Nieman, Hung-ta Pai, Ali Y. Panah, Sri Priya Ponnappalli, Hamood-ur Rehman, Jeffrey T. Russell, Michele Saad, Koichi Sato, Wade C. Schwartzkopf, K. C. Slatton, Zukang Shen, Deependra Talla, Murat Torlak, Kien Truong, Yuanxun Wang, Zhou Wang, Karen Watkins, Dong Wei, Kyle D. Wesson, Ian C. Wong, Johnathan York, and Shi Zhong.
- Ph.D. Qualifying Committees (69): Taner Akkin, Gregory E. Allen, Dogu Arifler, Güner Arslan, Alberto Arredondo, Serene Banerjee, Ramya Bhagavatula, Gwangwoo “Johnny” Choe, Eun Ho Choi, Jinseok Choi, Aditya Chopra, Thayne R. Coffman, Niranjan Damera-Venkata, Ming Ding, Kurt A. Feiste, Kapil Gulati, Kyungtae Han, Chao Jia, Zak Kassas, Adnan Kavak, Ivy Kelly, Jaekwon Kim, Youngchun Kim, Youngok Kim, Thomas D. Kite, Hoojin Lee, Sanghoon Lee, Jinyang Liang, Jing Lin, Shizhong Liu, Biao Lu, Anderson Mills, Milos Milosevic, Faris B. Mismar, Jianhua Mo, Bishwarup Mondal, Vishal Monga, Yousof Mortazavi, Marcel Nassar, Richard Naethling, Karl F. Nieman, Behrang Nosrat-Makouei, Hung-ta Pai, Ali Y. Panah, CheolHee Park, Sri Priya Ponnappalli, Hamood-ur Rehman, Jeffrey T. Russell, Michele Saad, Koichi Sato, Wade C. Schwartzkopf, K. C. Slatton, Zukang Shen, Junmo Sung, Deependra Talla, Vijay A. Tadiapatri, Murat Torlak, Joel Tropp, Kien Truong, Yuanxun Wang, Zhou Wang, Karen Watkins, Jeff Wehnes, Dong Wei, Kyle D. Wesson, Ian C. Wong, Johnathan York, Aron Yu, and Shi Zhong.
- M.S. Thesis Committees (3): Anjum Ali, Mike Kuei-che Cheng, and Hamid R. Sheikh.
- M.S. Report Committees (17): Gregory E. Allen, John R. W. Ammerman, Tai-Wu Chiang, Young Cho, Yeong Foong Choo, Amey A. Deosthali, Srikanth Gummadi, Thomas P. Higdon, Norman James, Michael Kardonik, Jeff Livingston, Benjamin Marrou, Kenneth A. Perrine, Charles R. Powers, Roopsha Samanta, Ghadi Sebaali, Mahalakshmi Venkataraman, and Wenxiao Yu.
- Visiting graduate students (2): Lina Al-Kanj (American University of Beirut) 2009–2010 and Gilbert Badaro (American University of Beirut) 2015–2016
- Undergraduate thesis students (2): Marynia Demkowicz and Christopher Jackson.
- Undergraduate senior design students (172) including the following: Yeong Foong Choo (*Sound-Shield*), Arthur Ishiguro (**augmented reality project won first place among all ECE senior**

**design projects in fall 2011** , Jun-Qi Lau (*SoundShield*), Dung Le (*SoundShield*), Mark Leatherman (**SoundShield project won second place among honors/entrepreneurship senior design projects**), Sung Park (*SoundShield*), Negin Raoof (*SoundShield*), Divyanshu Vats (**image processing project won 2006 University Co-op/George H. Mitchell Award for Academic Excellence**), Brandon Williams (*SoundShield*)

- Other undergraduate supervision (10): Babar Ahmed, Navid Aghasadeghi, Brian Fernandes (conference course), Ricardo R. Garcia, Mohamed Gzara (exchange student), Robert Mullenix, Nnaemeka Ben Okafor, Negin Raoof (Relief of tinnitus symptoms), Arvind Sugeeth, and Divyanshu Vats.
- Ph.D. Defense Committees at the American University of Beirut (3): Nadine Abbas, Jihad Fahs, and Sireen Taleb.

## Computer Skills

- Assembly languages: Texas Instruments TMS320C3000/C5000 DSP, Texas Instruments TMS320C6000 VLIW DSP, Motorola 56000 DSP, Motorola 68000, Vax, PDP 11
- Scripting languages: csh, ksh, Perl, sed, sh, Tcl/Tk
- High-level languages: C, C++, Java, Lisp, Pascal, Fortran, APL
- Algorithm development environments: Khoros, LabVIEW, Maple, Mathematica, Matlab
- Electronic design automation tools: LabVIEW, Ptolemy, SIMULINK, Spice
- Knowledge-based environments: NExpert (expert system) and Integrated Process and Understanding of Signals (blackboard architecture)
- Software development tools: makefiles, source code control, Purify, debuggers, class browsers, gnats
- Developed large software systems portable to Unix and Windows NT operating systems

## Consulting

- Mar. and Apr. 2019, Office of the Provost, American University of Beirut, Beirut, Lebanon
- Nov. 2017, Feb. 2018, and Mar. 2018, Office of the Provost, American University of Beirut, Beirut, Lebanon
- Aug. 2011, Jul. 2012, Jun. 2013, Jul. 2014, and Jul. 2016. Dept. of Electrical and Computer Engineering, American University of Beirut, Beirut, Lebanon

## Vita

**Dr. Brian L. Evans** is the Engineering Foundation Professor of Electrical and Computer Engineering at The University of Texas at Austin. His earned his B.S.E.E.C.S. (1987) degree from the Rose-Hulman Institute of Technology, and his M.S.E.E. (1988) and Ph.D.E.E. (1993) degrees from the Georgia Institute of Technology. From 1993 to 1996, he was a post-doctoral researcher at the University of California, Berkeley. In 1996, he joined the faculty at UT Austin.

His research and teaching interests are in the processing of signals to increase connection speeds and reliability in communication systems and to improve visual quality of video and still images. More specifically, his research group develops signal processing theory and algorithms with implementation constraints in mind, and translates algorithms into design methods and embedded prototypes. His research group also develops and deploys full system testbeds to test out their research ideas. His current research effort is focused on multiantenna communication systems. Recently completed projects have included image quality assessment and smart phone video acquisition, as well as smart grid communications, wireless interference mitigation. He has also conducted research in system-level design. Prof. Evans was elevated to IEEE Fellow "for contributions to multicarrier communications and image display". In multicarrier communications, his group developed the first linear complexity algorithm that allocates resources to optimize bit rates in multiuser OFDM basestations (for cellular and WiMax) and is realizable in fixed-point hardware/software. His group also developed the first ADSL equalizer training method that maximizes a measure of bit rate and is realizable in real-time fixed-point software. In image display, his group's primary contribution is in the design, analysis, and quality assessment of image halftoning by error diffusion for real-time processing by printer pipelines.

Prof. Evans has published 270 refereed conference and journal papers, and graduated 29 PhD and 13 MS students. He has received several teaching awards: Gordon T. Lepley Memorial Teaching Award, which was at the time the sole ECE teaching award for faculty, in 2008; university-wide Texas Exes Teaching Award, in 2011; Best Professor Award from the UT Austin HKN/IEEE Student Chapter in 2012; and Undergraduate ECE Advisory Board for Excellence in Teaching in 2018. He has been awarded a best paper award and two top 10% best paper awards at international IEEE conferences: image processing, powerline communications, and multimedia signal processing. He received a 1997 US National Science Foundation CAREER Award.

In departmental service, he led the 2000-02 ECE undergraduate curriculum reform that changed 60 of 90 courses, added electives, reduced the degree by five hours, and made graduation in four years realistic. He co-chaired the 2008-10 reform to adapt to the new university core curriculum. In 2002, he became ECE Curriculum Committee Chair to implement the new curriculum. The committee also evaluates non-tenure-track faculty, monitors course surveys, assigns instructors, recommends TAs for awards and remediation, and manages the \$3M instructional budget. After stepping down in 2017, he has been coordinating peer teaching evaluations.

In university service, he has been on the Committee of Counsel on Academic Freedom and Responsibility from 2008-15 and 2016-19, and was elected chair for six years. This committee advises the President and Provost. They hear appeals on procedural and academic freedom grounds concerning tenure, promotion, annual, post-tenure, and mid-probationary evaluations. As part of the Well-Being in Learning Environments project since spring 2018, he has been providing and implementing ideas to destress classes to help students learn better. He also co-authored a Resource Guide to Mental Health Services for Graduate Students in Jan. 2019. As Chair of Faculty Council 2019-20, he is guiding university-wide efforts in faculty affairs, student affairs, and resource allocation. Faculty Council plays a vital role in shared governance by evaluating, monitoring, and providing recommendations on undergraduate curriculums and degree programs, and by developing and updating university policies affecting faculty, staff, and students. The latter policies include those on faculty evaluation, workload, compensation, academic freedom, and grievances; student services, activities, admissions, and employment; and budgets, libraries, research, and IT.

