VALLATH NANDAKUMAR

3105 Eaneswood Dr, Austin, TX 78746
(512)-923-9658 (Cell); vallathn@austin.utexas.edu

EDUCATION

- 1990 University of California, Berkeley, CA
  Ph.D. in Electrical Engineering.
- 1985 University of California Berkeley, CA
  M.S. in Electrical Engineering.
- 1982 Indian Institute of Technology, Madras, India
  BTech in Electrical Engineering (Electronics).

EXPERIENCE

- Teaching in the ECE and CS Department at the University of Texas, Austin (5 years)
  - C, C++, Java programming, Algorithm Design
- Taught course modules at the graduate level in cell phone technology, VLSI testing, VLSI design, Internet hardware, technical writing, physics. (5 years)
- Research and development activities in superconducting electronics, high-end optical communication, integrated circuit design methodologies, Computer-Aided Design tools, and cyber security software.
- Published 6+ papers in IEEE journals on superconducting electronics.
- Six patents granted in VLSI and superconductors.
- Managed teams of 30+ people spanning multiple countries.
- Have conducted computer programming contests with 400+ student participants from all over Asia coming together.

EMPLOYMENT HISTORY AND EXPERIENCE

Aug. 2013-Present Full-time Lecturer in the Departments of Computer Science, and Electrical and Computer Engineering, University of Texas, Austin

- Courses taught: Algorithms, basic and advanced programming, Ethics of Computer Science, Writing for CS majors
- Texas University Interscholastic League Director for Computer Science, 2013-2014.

Mar 2012-Jun 2013 Substitute Teacher, Eanes Independent School District, Austin, TX

- Substitute teacher for grades K-12 and all subjects.

Mar 2012-Jun 2013 Tutor, Austin Community College, Austin, TX

- Taught Algebra and Calculus, Business Economics, Statistics, Physics, English, German.

Oct 2006-Jun 2013 Professor/Adjunct Professor, Amrita University, Amritapuri Campus, India (http://www.amrita.edu)

- Director of Center of Excellence in Cyber Security
- Taught courses in VLSI architecture, design and testing, and on Wireless systems.
- Regional Contest Director for the ACM International Collegiate Programming Contest

1996-Oct 2006 AMD Sunnyvale, CA, & AMD Austin, TX, Section Manager

- Responsible for validation of computer systems
- Verification team leader for large communication chips
- Digital design team leader and program management of tasks such as analog design, packaging, production testing, system testing, emulation, and marketing.
- **Winner of Design Automation Conference's silver medal for innovative use of CAD tools**

1990-1996 Tektronix Inc., Beaverton, OR, Design Manager

- Design leader for optical and semiconductor integrated circuits for communication.
- Published four papers in international conferences and journals.
- **Winner of 1995 R&D Magazine award for one of the 100 most innovative products for the year**

1982-1990 University of California, Berkeley, CA

- Research Assistant. Thesis work for Ph.D. -- *Design, Fabrication, and Testing of a Superconductive Shift Register.*
- Built up an 8-layer fabrication process from scratch for digital superconductive circuits
- Designed innovative shift register circuit, and tested it

SOME PATENTS & PUBLICATIONS

- *Apparatus and method for programmable memory access slot assignment*, Patent granted Apr 2006, US Patent **7,031,305**.
- *Method and apparatus for maintaining randomly accessible free buffer information for a network switch*, Patent granted Sept 2003, US Patent **6,618,390**.
- *Apparatus and method in a network switch for dynamically assigning memory interface slots between gigabit port and expansion port*, Patent granted Dec 2002, US Patent **6,501,734**.
- *Apparatus and method in a network switch for swapping memory access slots between gigabit port and expansion port*, Patent granted Aug 2002, US Patent **6,442,137**.
- *Memory Element with Multibit Storage*, Patent granted Mar 1997, US Patent **5,610,857**.
- *Experimental Evaluation of Some Rapid Single-Flux Quantum Cells*, Y. K. Kwong & V. Nandakumar, IEEE Trans. Magn., **3**, Mar 1993.
- *Design of a fast variable-frequency Josephson shift register,* V. Nandakumar and T. Van Duzer, IEEE Trans. Circuits Syst. ***35****, 1172–1174 (1988).*
- *A high-speed analog-to-digital converter using Josephson self-gating-AND comparators,* D. A. Petersen, H. Ko, R. E. Jewett, K. Nakajima, V. Nandakumar, J. W. Spargo, and T. Van Duzer,IEEE Trans. Magn. **21**, 200 (1985).
- *Flash-Type A/D Converters And Shift Registers,* D. A. Petersen; V. Nandakumar; E. Fang; D. F. Hebert; T. Van Duzer, Proceedings Volume 0879, Sensing, Discrimination, and Signal Processing and Superconducting Materials and Intrumentation; (1988)
- *4-bit Rapid Single-Flux-Quantum Decoder,* A.F. Kirichenko, V.K. Semenov, Y.K. Kwong, and V. Nandakumar, IEEE Trans. Appl. Supercond., **5,** 1995, pp. 2857-2860.

LANGUAGES

- Speak, read, and write English, Malayalam, Hindi and German, and some Russian and Tamil.