ELAINE A. RICH

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Employment

2000-present	Senior Lecturer, Department of Computer Science, The University of Texas at Austin.
2000-2002	Associate Chair for Academic Affairs, Department of Computer Sciences, The University of Texas at Austin.
1998-2000	Adjunct Associate Professor, Department of Computer Sciences, The University of Texas at Austin.
1988-1993	Director, Artificial Intelligence Laboratory, Microelectronics and Computer Technology Corporation (MCC), Texas.
1987-1988	Associate Director, Human Interface Laboratory, MCC.
1985-1987	Member, Technical Staff, Human Interface Laboratory. Team Leader, Knowledge-Based Natural Language Project, MCC.
1979-1984	Assistant Professor, Department of Computer Sciences, The University of Texas at Austin.

Education

Ph.D.	Computer Science, Carnegie-Mellon University, 1979. Thesis title: *Building and Exploiting User Models*.
A. B.	Independent Concentration in Linguistics and Applied Mathematics, Brown University, *magna cum laude*, 1972.

Courses Taught

CS 302	Computer Fluency (2011 - present) As Associate Chair for Academics in 2002, I created this class as our department's first foray into large-scale teaching of nonmajors. I began teaching it myself in Spring, 2011.
CS 329E	Elements of Computing in Society (2010) A nonmajors version of my CS 349.
LIN 340/ CS 341	Automata Theory (1998 – present) My experience teaching this class, and my realization of the need to motivate CS students to see why learning theory matters, inspired me to write my book, *Automata Theory*.
CS 341H	Honors Automata Theory (2007, 2008, 2010).
CS 343	Artificial Intelligence (1980 - 1984, then again 2004 – 2006) The 1980 - 1984 experience (along with CS 381K) inspired me to write the first edition of my book, *Artificial Intelligence*.
CS 345	Programming Languages (1979 - 1984)
CS 349	Contemporary Issues in CS (2008 - present) Completely redesigned this class, including augmenting the technical communication aspect to include student video production.
CS 378	Natural Language Processing.
CS 381K	Artificial Intelligence (1980 - 1984).
CS 395T	Intelligent User Interfaces (ca. 1984).
NSC 110	Deans Scholars Seminar (2001 - 2010) Approximately once a year. Topics have included: *Guns, Germs and Steel*, Artificial Intelligence, Do Scientists Have Crystal Balls, Gender Differences in Color Vocabularies, Mirrors on Ourselves, and Science in Society.
FS 301/UGS 302	Freshman Seminar: Mirrors on Ourselves. (2007 - present) Humankind's quest to create artificial copies of ourselves, from early legend to 19th century mechanical automata to modern AI and robotics.

Publications

Edited Publications

J. M. Lemm, E. A. Rich, G. Wiederhold and M. Harrison (eds), *Advanced Software Applications in Japan*. William Andrew Publishing, 1995.

Books

E. A. Rich, K. Knight and S. B. Nair, *Artificial Intelligence*, 3rd Edition (568 pages). Tata McGraw-Hill, 2009.

E. A. Rich, *Automata, Computability, and Complexity: Theory and Applications* (1100 pages). Prentice-Hall, 2008.

E. A. Rich and K. Knight, *Artificial Intelligence*, 2nd Edition (620 pages). McGraw-Hill, 1991. Translated into Spanish and Italian.

E. A. Rich, *Artificial Intelligence*. (440 pages). McGraw-Hill, 1983. Translated into: Japanese, Spanish, Portuguese, Italian, German and French.

Surveys, Editorials, and Reviews

E. A. Rich, "Intelligent Interfaces", in *Advances in Artificial Intelligence Research, Volume 1*, Mark Fishman (ed). Greenwich, Connecticut: JAI Press, pages 3-30, 1989.

E. A. Rich, "Artificial Intelligence", in *Encyclopedia of Artificial Intelligence*, S. Shapiro (ed.). New York: John Wiley Sons, pages 9-16, 1987.

E. A. Rich, "Natural Language Interfaces", in *Readings in Human-Computer Interaction: A Multidisciplinary Approach*, R. Baeker & W. Buxton (eds.). Los Altos, CA: Morgan Kaufmann Publishers, pp. 442-450, 1987.

E. A. Rich, "Natural Language Interfaces", *IEEE Computer*, September, 1984, pp. 39-47.

E. A. Rich, "Research at The University of Texas", *The AI Magazine*, Winter, 1983, pp. 55-57.

Book Chapters

E. A. Rich, "Planning, Reacting, and Communicating", in *Communication from an Artificial Intelligence Perspective*, A. Ortony, J. Slack, O. Stock (eds.), pages 145-168, 1992.

W. Hill, J. Hollan, J. Miller, E. A. Rich, W. Wilner, K. Wittenburg, and D. Wroblewski, "An Introduction to HITS: Human Interface Tool Suite", in *Architectures for Intelligent Interfaces: Elements and Prototypes*, J. W. Sullivan & S. W. Tyler (eds), 1991.

E. A. Rich, J. Barnett, I. Mani, C. Aone, K. Knight, and J.C. Martinez, "Knowledge Based Machine Translation", in *Frontiers in Knowledge-Based Computing*, V. Bhatkar and K. Rege (eds.). New Delhi: Narosa Publishing House, 1991.

E. A. Rich, "Stereotypes and User Modelling", in *User Modelling in Dialog Systems*, A. Kobsa & W. Wahlster (eds.). Springer-Verlag, pages 35-51, 1989.

E. A. Rich, "Rationality and Creativity in Artificial Intelligence", in *Expert Systems and Knowledge Engineering*, T. Bernold (ed.), New York: North-Holland, pages 7-16, 1986.

E. A. Rich, "Users are Individuals: Individualizing User Models", in *Intelligent Information Systems*, Roy Davies (ed.). Chichester: Ellis Horwood, pages 184-201, 1986.

E. A. Rich and A. Temin, "MIRROR: A Language for Representing Programs for Reasoning", in *The Role of Language in Problem Solving I*, R Jernigan, B.W. Hamill and D. M. Weintraub (eds), Elsevier, pages 177-188, 1985.

Journal Articles

J. Barnett, K. Knight, I. Mani, E. A. Rich, "Knowledge and Natural Language Processing", *Communications of the ACM*, August, 1990, pp. 50-71.

W. Myers, "Expert Interview. Elaine Rich – Expert Systems and Neural Networks Can Work Together", IEEE Expert, 5(5), 1990, pp 5-7.

E. A. Rich, "The Gradual Expansion of Artificial Intelligence," *IEEE Computer*, May, 1984, pp. 4-12.

E. A. Rich, "Artificial Intelligence and the Humanities," *Computers and the Humanities*, Fall, 1984.

E. A. Rich, "Users are Individuals: Individualizing User Models," *International Journal of Man Machine Studies*, 18, 1983, pp. 199-214.

E. A. Rich, "User Modeling via Stereotypes," *Cognitive Science*, 3, 1979, pp. 329-354. Reprinted in *Readings in Intelligent User Interfaces*, M. T. Maybury and W. Wahlster (eds.), Morgan Kaufmann, 1998, with a short reflection article following.

E. A. Rich, "Sex Related Differences in Colour Vocabulary," *Language and Speech*, December, 1978, pp. 404-409.

Articles in Conference Proceedings

E. A. Rich, "Portable NL Systems: Across Applications, Languages, and Knowledge Bases," *Proceedings of Avignon '92: Twelfth International Conference on Artificial Intelligence, Expert Systems, and Natural Language*, Avignon, France, June, 1992.

E. A. Rich and D. Wroblewski, "Luke: An Experiment in the Early Integration of Natural Language Processing," *Proceedings of the 2nd ACL Conference on Applied Natural Language Processing*, 1988.

E. A. Rich and S. Luperfoy, "An Architecture for Anaphora Resolution," *Proceedings of the 2nd ACL Conference on Applied Natural Language Processing*, 1988.

J. Barnett, E. A. Rich, K. Wittenburg, and D. Wroblewski, "Ambiguity Procrastination," *Proceedings AAAI-87*, 1987.

D. Sleeman, D. Appelt, K. Konolge, E. A. Rich, NS Sridharan, and B. Swartout, "User Modeling Panel", *Proceedings of IJCAI 9*, 1985, pp. 1298-1302.

E. A. Rich, "Natural Language Understanding: How Natural Can it Be?" *Proceedings of the Second IEEE Conference on Artificial Intelligence Applications*, December, 1985, pp 372-377.

E. A. Rich, "Default Reasoning as Likelihood Reasoning," *Proceedings AAAI-83*, 1983, pp. 348-351.

E. A. Rich, "Programs as Data for Their Help Systems," *Proc. NCC*, 1982, pp. 481-485.

E. A. Rich, "Building and Exploiting Individual User Models", *IJCAI 6*, 1979, pp. 720-722.

Articles in Workshop and Symposium Proceedings

E. A. Rich, "Knowledge Engineering for Natural Language Processing," *Proceedings of the Fifth International Symposium on Knowledge Engineering*. Seville, Spain, October, 1992.

J. Barnett, I. Mani, P. Martin and E. A. Rich, "Reversible Machine Translation: What to Do When the Languages Don't Line Up," *Proceedings of the ACL Workshop on Reversible Grammars in Natural Language Processing*, 1991.

J. Barnett, I. Mani, E. A. Rich, C. Aone, K. Knight and J. C. Martinez, "Capturing Language-Specific Semantic Distinctions in Interlingua-Based MT," *Proceedings of Machine Translation Summit III*, 1991.

J. Barnett, I. Mani, E. A. Rich, C. Aone, K. Knight and J. C. Martinez, "Resolving Translation Mismatches and Divergencs in an Interlingua-Based MT System", *Proceedings of International Workshop on Fundamental Research for the Future Generation of Natural Language Processing*, Kyoto, Japan, pages 127-146, 1991.

R. M. Cohen, T. P. McCandless, and E. A. Rich, "A Problem Solving Approach to Human-Computer Interface Management," *Proceedings of Workshop on Blackboard Systems, IJCAI-89*, 1989.

K. Knight, E. A. Rich, and D. Wroblewski, "Integrating Language Acquisition and Knowledge Acquisition," *Proceedings of Workshop on Automated Tools for Lexical Acquisition, IJCAI-89*, 1989.

J. Hollan, J. Miller, E. A. Rich, W. Wilner, "Knowledge Bases and Tools for Building Integrated Multimedia Intelligent Interfaces," *Proceedings of Workshop on Architectures for Intelligent Interfaces: Elements and Prototypes*, 1988.

A. Temin and E. A. Rich, "Automating the Desk Analysis of Programs," *Proceedings of the Twentieth Annual Hawaii International Conference on System Sciences*, 1987, pp. 54-63.

A. Temin and E. A. Rich, "Representing Programs for Reasoning," *Proceedings of the Symposium on the Role of Language in Problem Solving*, October, 1984.

E. A. Rich, "Inference and Use of Simple Predictive Grammars", *Proceedings of the IEEE Symposium on Speech Recognition*, 1974, p. 242.

Research Support

At the University of Texas

"Individual User Models in Computer Systems", $56,315. National Science Foundataion, August, 1980.

(with J.C. Browne, A.G. Dale, D.I. Good, and A. Silberschatz) "An Experimental Computing Facilitiy to Support the Design and Analysis of Reliable, High-Performance, Distributed Systems", $3,700,000. National Science Foundation, June, 1982.

(with G. Novak, R. Simmons, and V. Kumar) "Support for an A.I. Laboratory", $1,300,000. Army Research Office, June, 1984.

(with J Moore) "Target Diversity: Increasing Graduation Rates by Recruiting and Retaining Underrepresented Populations", $198,000. Texas Higher Education Coordinating Board.

At MCC

Commercial support for natural language processing research, $900,000/year.

Awards and Honors

- Phi Beta Kappa Award for Distinction in Teaching nomination, 2010

- My book, *Artificial Intelligence*, appeared on Techoozie's list, "10 Books that Will Substitute a Computer Science Degree", June, 2008:

  http://www.techoozie.com/10-books-that-will-substitute-a-computer-science-degree/

- Natural Sciences Council, Faculty Service Award, 2007.

- My book, *Artificial Intelligence*, appeared on the Association for Computing Machinery (ACM)'s list (voted on by members) of the 25 classic books in Computer Science, 2006:

  http://membernet.acm.org/public/membernet/storypage_2.cfm?announcement=2&ci=March_2006

- UT College of Natural Sciences Outreach Innovation Award, (shared) for First Bytes, a summer CS camp for high school girls, 2006.

- Girl Scouts Lone Star Council Award for Outstanding Community Service (for Expanding Your Horizons) (1997, 2004).

- YWCA Austin Leadership Award, Outstanding Achievement, Science and Technology (for Expanding Your Horizons) 1993.

- Elected Fellow, Association for the Advancement of Artificial Intelligence (AAAI), 1991.

- ACM UT Student Chapter, Teaching Excellence Award at the Graduate Level, Fall, 1984.

- ACM UT Student Chapter, Teaching Excellence Award, Spring, 1984.

Service

Departmental

- Web Design Committee (2010-2011). Redesigned the undergrad program section of the site.
- Turing Scholars Committee (2001-5, 2009-present).
- Turing Scholars Design and Creation Committee (2001).
- Women in Computer Science (WICS), worked with the students in various ways (2005-present).
- Elements of Computing Committee (2009-present).
- Academic Integrity Committee (2005-2007).
- UT Student Web Developers organization, faculty advisor (2005-2006).
- CS Admissions and Retention Committee (2001-2002, 2007-2010).

- Associate Chair for Academics (2000-2002).

- Undergraduate Studies Committee (chair) (2000-2002).

- First Bytes (CS summer camp for high school girls): Created and got it funded (2002). Organizing committee and/or presenter (2002-2004, 2009).

- Faculty Evaluation Committee (2001-2002).

Community

- Expanding Your Horizons (EYH), a program to encourage middle-school girls to maintain their interest in math and science. Participant (1994); General Chair (1995-2005), UT Faculty sponsor (2001-present)

- TWIST (Tomorrow's Women in Science and Technology), a 501(c) 3 corporation, Founder and President (1996-2003), Board Member (2004-2005).

- Ann Richards School for Young Women Leaders, various activities including working with WICS to organize activities (2006-present).

College/University

- UGS Faculty Committee on the Writing Flag (2011- present)

- Faculty Greivance Committee (2010 – 2012).

- Center for Women's and Gender Studies, various roles on Steering Committee, Executive Committee, Curriculum Committee, and organizing committee for Gender and Technology Research Cluster (2003-present).

- Bridging Disciplines Program, Digital Arts and Media, Faculty Panel (2001-present).

- CNS Course and Curriculum Committee (2000-2002)

- Outreach/orientation activities including presenting at the Junior Honors Colloquium and Camp Texas (2000-present).

Journal Editing and Editorial Boards

- Editor, *The AI Magazine* (1991 - 1993)

- Associate Editor, *The AI Magazine* (1990 - 1991)

- Editorial Board, *Artificial Intelligence Review* (1988 - 1995)

- Editorial Board, *The Knowledge Engineering Review* (1986 - 1995)

- Editorial Board, *User Modeling and User-Adapted Interaction* (1989 - 1995)

- Editorial Board, *Applied Intelligence* (1990 - 1995)

Program Committees

- Program Committee, Innovative Applications of Artificial Intelligence (IAAI) (2005 - 2008)

- Cochair, AI Nectar Track, AAAI (2006 – 2007)

Other Service

- Member, External Advisory Board, Language and Technologies Institute, CMU (2006, 2012)

- AAAI Councilor (1988 - 1991)

- Advisory Committee, NSF CISE, Div. of Information, Robotics and Intelligent Systems (1988-90)

- Advisory Committee, NSF CISE Directorate, Office of Cross Disciplinary Activities (1990-92)

- Discipline Advisory Committee, Council for International Exchange of Scholars (the Fulbright Program) (1991 - 94)

- Japanese Technology Evaluation Center (JTEC) Panel on Machine Translation (Editor of Final Report) (1990)

- Chair, Industrial Advisory Board, IEEE Educational Activities (1991)

- Tutorials Chair, AAAI (1989 - 1990)

- Local arrangements chair, AAAI conference in Austin, 1984