

## CURRICULUM VITAE

NEIL E. COTTER, PH.D.  
Professor (Lecturer)  
50 S. Central Campus Dr., MEB 2270  
University of Utah  
Salt Lake City, UT 84112  
(801) 581-8566

EDUCATION: *Stanford University*, Ph.D. in Electrical Engineering, 1986.  
Dissertation title: *Modeling of Auditory Prostheses*  
*Stanford University*, M.S. in Mathematics, 1985.  
*Stanford University*, M.S. in Electrical Engineering, 1981.  
*Caltech*, B.S. with honors in Electrical Engineering, 1979.

UNIVERSITY  
EMPLOYMENT: *Associate Professor (Lecturer)*, Electrical and Computer Engineering Dept.,  
University of Utah. 7/2009 to present.

Selected list of courses taught: (7/1999 to present; labs omitted for brevity)

ECE1240	3	Introduction to Circuit Design
ECE1900	1	Freshman Seminar
ECE2210	3	Electrical Engineering for Nonmajors
ECE2240	3	Introduction to Electric Circuits
ECE2280	3	Introduction to Electric Circuits
ECE3530	3	Engineering Probability and Statistics
ECE3940	1.5	Technical Communication I
ECE3950	1.5	Technical Communication II
ECE4710	3	Computer Engineering Senior Project
ECE5530	3	Digital Signal Processing
ECE5570	3	Control of Electric Motors
ECE6560	3	Multivariable Systems (taught first part of course)
ECE6551	3	Survey of Optimization Methods
ECE6552	3	Survey of Function Approximation Methods

*Research Assistant Professor*, Electrical Engineering Department,  
University of Utah. 7/1991 to 7/2009.

*Assistant Professor*, Electrical Engineering Department,  
University of Utah. 7/1986 to 7/1991.

Research areas: Neural networks, adaptive nonlinear systems

INDUSTRY  
EMPLOYMENT: *Consultant*, Api Analysis Inc., Durham, NC. 4/1997 to 5/2002.  
Design and coding (Matlab<sup>®</sup>) of signal processing algorithms.  
*Consultant/Software Developer*, Fonix Corp., Draper, UT. 5/1997 to 6/1998.  
Design and coding (C, C++, UNIX) of algorithms for speech recognition.  
*Consulting Engineer*, Geneva Steel, Vineyard, UT. 7/1991 to 5/1997.  
Design and coding (C, C++, UNIX) for optimized industrial process control.

ACTIVITIES: Member, IEEE  
Member, ASEE

## SELECTED PUBLICATIONS

- JOURNAL PAPERS: F. Koohestan-Mahalian and N. E. Cotter  
“A framework for analyzing, designing, and visualizing spiking neural networks part II: nonlinear response surfaces”  
*IEEE Access*, vol. 8, 2020: 203945-203964.
- F. Koohestan-Mahalian, N. E. Cotter, P. T. Zamani, A. M. Rubart  
“A framework for analyzing, designing, and visualizing spiking neural networks part I: linear response surfaces”  
*IEEE Access*, vol. 9, 2021: 8935-8953.
- A. S. Younger, P. R. Conwell, and N. E. Cotter  
“Fixed-weight on-line learning”  
*IEEE Trans. Neural Networks*, vol. 10, no. 2, pp. 272-283, 1999.
- N. E. Cotter, A. M. Picklesimer, G. P. Petrus, and N. D. Hanks  
“Minimizing the number of passes for a reversing roughing mill”  
*Iron and Steel Eng.*, vol. 73, no. 1, pp. 36-39, 1996.
- N. E. Cotter and P. R. Conwell  
“Universal approximation by phase series and fixed-weight networks”  
*Neural Comp.*, vol. 5, no. 3, pp. 359-362, 1993.
- N. E. Cotter and T. J. Guillerm  
“The CMAC and a theorem of Kolmogorov”  
*Neural Networks*, vol. 5, no. 2, pp. 221-228, 1992.
- N. E. Cotter and O. N. Mian  
“A pulsed neural network capable of universal approximation”  
*IEEE Trans. Neural Networks*, vol. 3, no. 2, pp. 308-314, 1992.
- N. E. Cotter  
“The Stone-Weierstrass theorem and its application to neural networks”  
*IEEE Trans. Neural Networks*, vol. 1, no. 4, pp. 290-295, 1990.
- CONFERENCE PAPERS: F. Koohestan-Mahalian and N. Cotter  
“Exact Characterization of Phase Locking in a Linear Recurrent Spiking Neural Network”  
*Conference on Signals, Systems, and Computers*  
Asilomar, CA, Nov 2020
- C. Furse, N. Cotter, A. Rasmussen  
“Bottlenecks and Muddiest Points in a Freshman Circuits Course”  
*ASEE Annual Conference*,  
Salt Lake City, UT, June 2018
- R. Kempster, C. Furse, N. Cotter, N. Safai, and L. Brinton  
“Challenges in Curriculum Adaptation across Institutions of Higher Education: Similarities between International and National Student Transfer”  
*ASEE Annual Conference*,  
Chicago, IL, July 2006

- N. E. Cotter and P. R. Conwell  
“Learning algorithms and fixed dynamics”  
*Proc. International Joint Conf. on Neural Networks*  
Seattle, WA, July 8-12, 1991, vol. I, pp. 799-804.
- N. E. Cotter, J. B. Soller, T. J. Guillerm, and P. R. Conwell  
“Prejudicial searches and the pole balancer”  
*Proc. International Joint Conf. on Neural Networks*  
Seattle, WA, July 8-12, 1991, vol. II, pp. 689-694.
- T. J. Guillerm and N. E. Cotter  
“A diffusion process for global optimization in neural networks”  
*Proc. International Joint Conf. on Neural Networks*  
Seattle, WA, July 8-12, 1991, vol. I, pp. 335-340.
- N. E. Cotter and P. R. Conwell  
“Fixed-weight networks can learn”  
*Proc. International Joint Conf. on Neural Networks*  
San Diego, CA, June 17-21, 1990, vol. III, pp. 553-559.