

Richard J. Perry

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Professional Interests

- Computational algorithms and implementations
- Unix and Internet security; encryption
- Programming languages: C and Python

Education

- 1981 **Drexel University**
Ph.D. in Electrical Engineering, Advisor: Dr. H. H. Sun
- 1977 **Drexel University**
M.S. in Electrical Engineering
- 1974 **Drexel University**
B.S. in Electrical Engineering

Employment Experience

- 1993–present Associate Professor, Department of Electrical & Computer Engineering.
Villanova University, Villanova, PA.
- 1980–1992 Assistant Professor, Department of Electrical & Computer Engineering.
Villanova University, Villanova, PA.
- 1980–1987 Consultant on computer algorithms for biomedical signal processing.
Gastrointestinal Section of the Department of Medicine, Hospital of the University of Pennsylvania, Phila, PA.
- Sept. 1979 Invited Lecturer on Modern Control Theory.
Instituto Tecnologico Regional de Chihuahua, Chihuahua, Mexico.
- 1978–1979 Instructor for EE Algorithms, Controls, and Networks courses.
Drexel University, Phila, PA.
- 1972–1974 Eighteen months Cooperative Employment Experience; design, construction and testing of microwave integrated circuits.
COMSAT Labs, Clarksburg, MD.

Professional Activities

- Member: IEEE, ACM, Eta Kappa Nu, Sigma Xi.

Bicycle Competitions

- Winner of the Sept/Oct–1999 ride–your–bike–to–work competition between me and Kevin Buckley.

Research Grants

- Office of Naval Research, “Space–Time Array Processing for Radar and Communications,” 1998–2001. Co–Investigators: Kevin Buckley and Joseph Teti.
- IBM, “Strengthening of the Modeling and Simulation Components of Graduate Education,” 1984. Co–Investigators: Steven Konyk and Robert Lynch.

Patents

- # **8,171,549** May 1, 2012, Apparatus, methods and articles of manufacture for intercepting, examining and controlling code, data, files and their transfer.
- # **8,056,131** November 8, 2011, Apparatus, methods and articles of manufacture for intercepting, examining and controlling code, data and files and their transfer. (Continuation of # 7,502,829)
- # **7,716,736** May 11, 2010, Apparatus, methods and articles of manufacture for computer virus testing.
- # **7,703,078** April 20, 2010, Apparatus, methods and articles of manufacture for software demonstration.
- # **7,502,829** March 10, 2009, Apparatus, methods and articles of manufacture for intercepting, examining and controlling code, data and files and their transfer.

Publications

1. “On MLSE Algorithms for Unknown Fast Time Varying Channels,” *IEEE Transactions on Communications*, May 2003. Co–authors: Hai Chen & Kevin Buckley.
2. “On Computing and Implementing the Running Bispectra,” *IEEE Transactions on Signal Processing*, April 1995. Co–author: M. Amin.
3. “An Algorithm for the Assignment of System Zeros,” *Automatica*, May 1991. Co–authors: W. Berger & H. H. Sun.
4. “Colonic Slow Wave Analysis: Limitation of the Usefulness of the Fast Fourier Transform (FFT),” *Digestive Diseases and Sciences*, 1989. Co–authors: A. Sunshine, J. Renolds, S. Cohen & A. Ouyang.
5. “Determination of Transfer Function Matrix in Multivariable Systems,” *IEEE Transactions on Automatic Control*, AC–33, No. 3, March 1988. Co–authors: W. Berger & H. H. Sun
6. “Transfer Function Matrix Realization in Multivariable Systems,” *Transactions of The Institute of Measurement and Control*, London, UK, Vol. 10, No. 1, pp. 4–8, Jan–Mar 1988. Co–authors: W. Berger & H. H. Sun. Also presented at the *International Symposium on Applications of Multivariable System Techniques*, Plymouth, UK, April 1987.

7. "The Model 100 Companion: Business and Entertainment Programs for Portable Computing," *Osborne/McGraw-Hill*, 1984. Contributed pages 67–72.
8. "Saving Doomed Files after a Cold Start," *Portable 100*, Vol. 2, No. 11, November 1984.
9. "Etch-A-Screen," 80 Micro, July 1984.
10. "Synthesis of Transfer Function Matrices Using Pole-Zero Control," *Ph.D. Thesis, Drexel University*, 1981.

Conferences

1. "Machine Learning Toolkit for System Log File Reduction and Detection of Malicious Behavior," *2021 IEEE INFOCOM*. Co-author: R. Ritchey.
2. "An Internet Approach for Engineering Student Exercises," *Fall 2010 Mid-Atlantic American Society for Engineering Education Conference*.
3. "Flexile Middleware: Responding to Operational Demands of Critical Network-Based Applications," *2010 International Conference on Information Technology: New Generations*. Co-author: T. Dubois.
4. "Batch Spreadsheet for C Programmers," *July 2009 International Conference on Scientific Computing*.
5. "Implementation and Security of a Web-based Unix Programming Environment," *July 2009 International Conference on Internet Computing*.
6. "Work in Progress: SpreadSheet Implementation Programming Project Course," *October 2008 Frontiers in Education Conference*.
7. "Multimedia Web-based Programming Development Environment," *October 2007 Frontiers in Education Conference*.
8. "View/Edit/Compile/Run Web-based Programming Environment," *October 2004 Frontiers in Education Conference*.
9. "Soft Output Decoding Algorithm for Spacetime Block Codes over Unknown Time Varying Channels with Intersymbol Interference," *Asilomar Conference on Signals, Systems, and Computers*, November 2003. Co-authors: S. Somayajula & K. Buckley.
10. "Space-Time Block Coding over Unknown Frequency and Time Selective Fading Channels," *Conference on Information Sciences and Systems (CISS)*, March 2003. Co-authors: C. Wang & K. Buckley
11. "Optimal Queueing Strategies for Email Virus Scanning," *March 2002 Conference on Information Sciences and Systems*, Princeton University. Co-author: Mark G. Thomas.
12. "Multiple User Maximum Likelihood Based Sequence Estimation for Unknown, Frequency Selective, Fast Time Varying Channels," *November 2001 Asilomar Conference on Signals, Systems, and Computers*. Co-authors: Diane Pytel & Kevin Buckley.
13. "Direct and EM-based MAP Sequence Estimation with Unknown Time-varying Channels," *May 2001 IEEE International Conference on Acoustics, Speech, and Signal Processing*. Co-authors: H. Chen and K. Buckley.

14. "MAP Sequence Estimation for Fading ISI Channels," *March 2001 Conference on Information Sciences and Systems*. Co-authors: H. Chen and K. Buckley.
15. "Time-Recursive Maximum Likelihood Based Sequence Estimation for Unknown ISI Channels," *October 2000 Asilomar Conference on Signals, Systems, and Computers*. Co-authors: Hai Chen & Kevin Buckley.
16. "EM algorithm for sequence estimation over Gauss-Markov ISI channels," *ICC-2000*, June 2000. Co-authors: W. Andrew Berger & Kevin Buckley.
17. "A new pruning/merging algorithm for MHT multitarget tracking", *Radar-2000*, May 2000. Co-authors: Kevin Buckley & Anand Vaddiraju.
18. "Time-Recursive number-of-tracks estimation for MHT," *SPIE-2000*, Apr. 2000. Co-authors: Jessica Bradley & Kevin Buckley.
19. "Sequence estimation over linearly-constrained random channels," *CISS - 34-th Annual Conference on Information Sciences and Systems*, pp. FA7.7-12, Mar. 2000. Co-author: Kevin Buckley.
20. "Maximum likelihood source localization using the EM algorithm to incorporate prior parameter distributions," *SAM Workshop*, Mar. 2000. Co-author: Kevin Buckley.
21. "EM algorithm for sequence estimation over random ISI channels", *Proc. 33-rd Asilomar Conference on Signals, Systems and Computers, Asilomar CA*, pp. 295-299, Oct. 1999. Co-authors: W. Andrew Berger & Kevin Buckley.
22. "Multitarget List Viterbi Tracking Algorithm," *Proc. Asilomar Conference on Signals, Systems and Computers, Asilomar CA*, November 1998. Co-authors: Anand Vaddiraju & Kevin Buckley.
23. "Field Programmable Gate Array Implementation of a Class of Computationally Efficient Recursive Time-Frequency Distribution Kernels," *International Conference on Signal Processing Applications and Technology (ICSPAT'95)*, 24-26 October 1995, Boston, MA. Co-authors: Moeness Amin & Sean Gallagher
24. "On Computing and Implementing the Running Higher Order Statistics," *Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, November 1993. Co-author: M. Amin.
25. "Systolic Array Implementation of Recursive Bispectrum Estimation," *IEEE Signal Processing Workshop on Higher Order Statistics*, Stanford Sierra Camp, South Lake Tahoe, CA, June 1993. Co-author: M. Amin
26. "Modeling for Digital Signature," *Spread Spectrum Workshop*, 22-23 May 1991, Montebello, Canada. Co-author: S. Kasturi.
27. "Geometric Approach to Parametric Sensitivity and Gain Suppression," *Proc. 1990 International Conference on Analysis and Optimization of Systems*, June 12-15 1990, Antibes, France. Co-author: W. Berger
28. "Optimality in the Eigenvalue Assignment Problem," *Proc. 1989 IEEE International Conference on Systems Engineering*, August 1989. Co-author: W. Berger

29. "Aspects of Eigenvalue Sensitivity in Multivariable Systems," *IFAC Workshop on System, Structure, and Control, State-Space and Polynomial Methods*, September 1989. Co-authors: W. Berger & H. H. Sun. Also presented at the 1989 IEEE International Conference on Systems Engineering, August 1989.
30. "Aspects of Eigenvalue Sensitivity in Multivariable Systems," *Proc. 1989 IEEE International Conference on Systems Engineering*, August 1989. Co-authors: W. Berger & H. H. Sun. Also presented at the IFAC Workshop on System, Structure, and Control, State-Space and Polynomial Methods, September 1989.
31. "Aspects of Optimality in the Eigenvalue Assignment Problem," *Proc. 1989 American Control Conference*, June 1989. Co-author: W. Berger
32. "Independent Parameter Control in Multivariable Systems," *Proc. 1989 American Control Conference*, June 1989. Co-authors: W. Berger & H. H. Sun
33. "Assignment of System Zeros Using a New Numerically Stable Algorithm," *Proc. of the 1988 IEEE International Symposium on Circuits and Systems*, Helsinki, Finland, June 1988. Co-authors: W. Berger & H. H. Sun
34. "Sensitivity of Pole-Zero Configurations in Transfer Function Matrix Realization," *IEEE Int. Symp. on Circuits and Systems*, May 1987. Co-authors: W. Berger & H. H. Sun
35. "Transfer Function Matrix Realization in Multivariable Systems," *Int. Symp. on Appl. of Multivariable System Techniques*, Plymouth, UK, April 1987. Co-authors: W. Berger & H. H. Sun. Also in *Transactions of The Institute of Measurement and Control*, London, UK, Vol. 10, No. 1, pp. 4-8, Jan-Mar 1988.
36. "Using News Multicasting with UUCP," *USENIX Large System Administrators Workshop*, 9-10 April 1987, Phila. PA.
37. "Complete Pole-Zero Control in Multivariable Systems," *IEEE Int. Symp. on Circuits and Systems*, May 1986. Co-authors: W. Berger & H. H. Sun
38. "Computerized Evaluation of Spike Potentials Recorded from Human Colon," *1983 Conference of the Federation of American Societies in Experimental Biology*, FASEB, 10 April 1983, Chicago, Ill. Co-author: W. J. Snape, Jr.
39. "Realization of Unobservable Systems," *Primer Seminario de Ingenieria Electronica*, Vol. I, pp. 1-17, Instituto Tecnologico Regional de Chihuahua, Chihuahua, Mexico, 20 Oct. 1979.
40. "Realization of Multiport Systems with Controlled Sources and a Minimum Number of Energy Storage Elements," *Proc. 22nd Midwest Symposium on Circuits and Systems*, pp. 585-589, Philadelphia, PA, June 1979. Co-authors: J. D'Alessandro & H. H. Sun
41. "Pole-Zero Control in Multiport Systems," *Proc. IEEE International Symposium on Circuits and Systems*, p. 1113, New York, NY, May 1978. Co-author: J. D'Alessandro
42. "Modification of Linear Systems by Controlled Sources for Transfer Function Matrix Synthesis," *Proc. 1977 Allerton Conference on Communication, Control and Computing*, pp. 640-641, Allerton, Ill., Sept. 1977. Co-author: J. D'Alessandro