

Ilan N. Goodman

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RESEARCH INTERESTS

Statistical signal processing; information theory; neural signals and coding

EDUCATION

Rice University, Houston, Texas

PhD in Electrical Engineering - Systems
MS awarded January 2005

expected May 2008

University of Western Ontario, London, Ontario

B.E.Sc. in Electrical Engineering - Wireless Communications
Graduated with Distinction

June 2002

PRACTICAL EXPERIENCE

Park Assist, Sydney, Australia

Engineering Consultant

July 2006 - present

Managed and contributed to the design, construction, and installation of wireless sensor networks for parking space management and enforcement.

ECE Department, Rice University, Houston, Texas

Research Assistant

Spring 2003 - present

Conducted research in signal processing and computational neuroscience, under the supervision of Dr. Don H. Johnson.

Teaching Fellow

Fall 2004

Assisted the primary instructor for the course "Signals and Systems"; Developed course material, including lecture notes, homework and exams; Prepared and delivered fifteen in-class lectures; Provided private tutorials and extra help sessions to students.

Time Domain, Huntsville, Alabama

Engineering Consultant

Summer 2002

Assisted in the development of an analysis tool to make performance predictions for Time Domain Corporation's Ultra-Wideband radio systems.

Summer Intern

Summer 2001

Worked in a team on a simulation analysis of the 2nd generation Ultra-Wideband digital radio; Designed and implemented simulations, performed data post-processing and statistical analysis using Matlab; Created custom software to aid in simulation data processing and visualization.

iLAN Network Consulting, London, Ontario

President and Founder

September 2000 - March 2001

Founded and operated a small business to install and support home computer networks for university students.

Abas Computing, Richmond Hill, Ontario

Programming Consultant

Summer 1999, 2000

Designed custom order-entry, invoicing, and accounting systems to client specifications using the dBase++, Clipper, Xbase++, C, and Java programming languages.

HONORS AND AWARDS

- Natural Sciences and Engineering Research Council of Canada (NSERC) Postgraduate Scholarship (2006-present) - tenable in the U.S.
- Texas Instruments Fellowship (2002-present)
- Rice Graduate Fellowship (2002-present)
- NSERC Postgraduate Scholarship (2005, declined) - only tenable in Canada, declined in favor of studying at Rice
- Rice ECE Teaching Fellowship (2004)
- Edmund McAshan Dupree Fellowship (2002-2003)
- First Place, ECE Senior Project Competition, UWO (2002)
- Deans Honor List, UWO (1998-2002)
- Engineering Excellence Scholarship, UWO (1998-1999)

PUBLICATIONS

- [1] D. H. Johnson and I. N. Goodman, "Capacity of Populations: Implications for Neural Prosthetics," *submitted*.
- [2] D. H. Johnson and I. N. Goodman, "Capacity of the Vector Poisson Channel," *submitted*.
- [3] I. N. Goodman and D. H. Johnson, "A Rate-Distortion Approach to Selective Attention," *submitted*.
- [4] C.J. Rozell, I. N. Goodman and D. H. Johnson, "Feature-Based Information Processing with Selective Attention," *Proceedings of the 2006 International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2006)*, May 2006
- [5] I. N. Goodman and D. H. Johnson, "Multivariate Dependence and the Sarmanov-Lancaster Expansion," *submitted*.
- [6] I. N. Goodman, "Analyzing Statistical Dependencies in Neural Populations," *MS Thesis*, Rice University, Jan. 2005
- [7] I. N. Goodman and D. H. Johnson, "Orthogonal Decompositions of Multivariate Statistical Dependence Measures," *Proceedings of the 2004 International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2004)*, May 2004
- [8] I. N. Goodman and D. H. Johnson, "New Multivariate Dependence Measures and Applications to Neural Ensembles," *Proceedings of the 2003 IEEE Workshop on Statistical Signal Processing*, Sept. 2003