Asohan Amarasingham

Department of Mathematics
The City College of New York
160 Convent Ave
New York, NY 10031 phone: (212) 650-5112

Research Interests

Statistics (nonparametrics; conditional inference; [multiple] hypothesis testing; nonstationary point processes; network inference). **Systems & Computational Neuroscience** (statistics of neurophysiological signals; the study of neuronal circuits and networks; neural coding).

Employment

The Graduate Center, CUNY New York, NY
Department of Psychology and Department of Biology
Assistant Professor May 2011-

The City College of New York, CUNY New York, NY
Department of Mathematics
Assistant Professor Sept 2010-

Rutgers, the State University of New Jersey Newark, NJ
Center for Molecular and Behavioral Neuroscience
Postdoctoral Associate (Laboratory of Professor György Buzsáki) Mar 2007-Aug 2010
NSF Postdoctoral Fellow Mar 2005-Mar 2007

University of Jaffna, Sri Lanka Jaffna, Sri Lanka
Department of Mathematics & Statistics
Lecturer Dec 2003-Jan 2005

University of Virginia Medical School, Dept of Neurological Surgery Charlottesville, VA
Research Assistant 1994-1997

Education

Brown University Providence, RI
Ph.D., Division of Applied Mathematics May 2004
Thesis: *The Statistical Analysis of Temporal Structure in the Activity of the Nervous System* (S. Geman, advisor)
Sc.M, Department of Cognitive & Linguistic Sciences May 1999

The University of Virginia Charlottesville, VA
B.Sc., Mathematics & Cognitive Science May 1997

Honors & Awards

US NSF Postdoctoral Fellow in Bioinformatics	2005-2007
Dana Fellowship, Brown University	2003
US DOE Computational Science Graduate Fellow	1998-2002
Echols Scholar, University of Virginia	1993-1997

Publications

M. T. Harrison, *A. Amarasingham*, R.E. Kass, "Statistical identification of synchronous spiking," In *Spike timing: Mechanisms and Function*. Eds: Patricia Di Lorenzo and Jonathan Victor. 2013. Taylor & Francis.

A. Amarasingham, M.T. Harrison, N. Hatsopoulos, S. Geman "Conditional modeling and the jitter method of spike resampling." **Journal of Neurophysiology,** Vol. 107, 2012, pp. 517-531.

S. Fujisawa, *A. Amarasingham*, M.T. Harrison, G. Buzsáki. "Behavior-dependent short-term assembly dynamics in the medial prefrontal cortex." **Nature Neuroscience**, Vol. 11, 2008, pp. 823-833.

E. Pastalkova, V. Itskov, *A. Amarasingham*, G. Buzsáki. "Internally-generated cell assemblies in the rat hippocampus." **Science**, Vol. 324, 2008, pp. 1322-1327.

A. Amarasingham, T.-L. Chen, S. Geman, M.T. Harrison, D.L. Sheinberg. "Spike count reliability and the Poisson hypothesis." **Journal of Neuroscience**, Vol. 26, 2006, pp. 801-809.

N. Hatsopoulos, S. Geman, *A. Amarasingham*, E. Bienenstock, "At what time scale does the nervous system operate?" **Neurocomputing**, Vol. 52-54, 2003, pp. 25-29.

A. Amarasingham, W.B. Levy. "Predicting the synaptic weight distribution in a self-organizing, sequence-prediction network." **Neural Computation**, Vol. 10, 1998, pp. 25-57.

Selected Invited Talks

Variability in Biology Workshop, Champalimaud Centre for the Unknown, Lisbon	Mar 2014
Bodian Seminar in Neuroscience, Johns Hopkins University	Sept 2013
Frontiers in Computational and Applied Mathematics, New Jersey Institute of Tech.	June 2013
8th Annual Federation of European Neuroscience meeting, Barcelona	Jul 2012
The Graduate Center, CUNY, Statistics Seminar	Mar 2011
Columbia University, Center for Theoretical Neuroscience	Feb 2011
Baylor College of Medicine, Duncan Neurological Research Institute	Mar 2010
University of North Texas, Biology	Mar 2010

City College of New York, Mathematics Feb 2010
Brown University, Applied Mathematics Feb 2010
International Statistical Institute (57th annual session) Aug 2009
Invited Paper Session, Neural Coding, Durban, South Africa
New Jersey Institute of Technology, Mathematical Sciences Mar 2009
The Statistical Analysis of Neural Data IV, Pittsburgh, PA May 2008
University of Jaffna, Sri Lanka, Physical Sciences Apr 2004
Mount Sinai Hospital, Biostatistics Sept 2003
Rutgers University, Molecular & Behavioral Neuroscience Sept 2003
New York University, Neural Science Sept 2003
Carnegie Mellon University, Statistics Aug 2003
Brown University, Applied Mathematics Oct 2003

Teaching Experience

Instructor, Mathematics, The City College of New York
Math 173 – Introduction to Probability and Statistics (Fall 2010)
Math 209 – Elements of Calculus and Statistics (Spring 2011, Fall 2012, Spring 2013)
Math 377 – Applied Probability and Statistics (Spring 2011, Spring 2012)
Math B76 – Advanced Topics in Statistics (Spring 2012)
Math 375 – Elements of Probability (Fall 2012)
Math A78 – Advanced Mathematical Statistics (Fall 2013)

Lecturer, Mathematics & Statistics, University of Jaffna, Sri Lanka
Math 401 -- Measure-Theoretic Probability I Jan 2004—Jun 2004
Math 402 -- Measure-Theoretic Probability II Aug 2004—Dec 2005

Teaching Assistant, Applied Mathematics, Brown University
AM 169 – Computational Probability & Statistics Fall 2000
AM 40 – Mathematical Methods in the Brain Sciences Spring 2001

Professional Activities

CCNY City Seeds Grant (PI, w. A. Rodriguez-Contreras): *Inferring synaptic plasticity from the activity of neuronal ensembles in the developing auditory system*, 1/2012-12/2012, ($50,000)

NIMH R01-MH102840-01 (PI, w. M.T. Harrison and G. Buzsaki): *Collaborative Research in Computational Neuroscience: Identification and Plasticity of Neuronal Microcircuits,* ($1,207,390), 2013-

Reviewer, City Seeds grants, 2012 cycle, City College of New York, CUNY

Admissions Committee, Doctoral Program in Cognitive Neuroscience, The Graduate Center, CUNY, 2011, 2013

Presentations at international conferences: Society for Neuroscience/SFN (2001,2005,2006, 2012); Computational Neuroscience/CNS (2002, 2003); Computational & Systems Neuroscience/COSYNE (2007,2008); Statistical Analysis of Neural Data/SAND (2006,2008); Joint Statistical Meetings/JSM (2007); International Statistical Institute/ISI (2009); FENS (2011)

Ad hoc reviewer for *Hippocampus*, *Journal of Computational Neuroscience, Psychological Review, Neural Circuits & Systems*, *Network: Computation in Neural Systems, Journal of Neural Engineering, PLoS Computational Biology*

Guest Editor, Special issue on "Modeling and Analysis of Neural Spike Trains", *Computational Intelligence and Neuroscience*

Program Committee, Computational and Systems Neuroscience (Cosyne) confierence, 2014-

Course Supervisor, Math 173 (CCNY), 2011-; Math 375 (CCNY), 2012-

Lead Member, AAUP Contract Negotation Team, Rutgers University Postdoctoral Associates, Aug 2009-Sep 2010

Project Coordinator, World Bank Institutional Development Proposal, University of Jaffna, Sri Lanka, 2004

Sri Lanka Chair, J. Luce Foundation, 2013-