

Alireza Soltani

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Education

Brandeis University, Waltham, MA 2002-2006

Ph.D., Physics, Aug 2006

Dissertation: “Neural Mechanism Underlying Reward-dependent Choice Behavior: A Cortical Network Model of Probabilistic Decision Making”

Advisor: Xiao-Jing Wang, Ph.D.

Sharif University of Technology, Tehran, Iran 1994-2000

M.S., Physics, May 2000

Dissertation: “Effect of D-brane Thickness on Graviton Absorption in Large Extra Dimension Theory”

Advisor: Farhad Ardalan, Ph.D.

B.S., Physics, May 1998

Professional Experience

Research Experience

Yale University, New Haven, CT

Postdoctoral Associate, 2006 to Present

Brandeis University, Waltham, MA

Research Fellow, 2003-2006

Teaching Experience

Brandeis University, Waltham, MA

Teaching Fellow, 2002-2003

Introductory Astronomy, Quantum Physics, Nonlinear Dynamics

Northeastern University, Boston, MA

Teaching Assistant, 2001-2002

Statistical Mechanics (graduate level), Introductory Physics Lab,

Interactive Learning Sessions

Talks and Seminars

- Computational and Systems Neuroscience, Decision Making Workshop, The Canyons, UT, Feb 2007
- Human Neuroimaging Lab, Baylor College of Medicine, TX, Feb 2007
- School of Cognitive Sciences, IPM, Tehran, Dec 2006
- Society for Neuroscience Annual Meeting, Atlanta, GA, Oct 2006
- University of Rochester, Rochester, NY, Sep 2004
- Sloan-Swartz Centers for Theoretical Neurobiology Summer Meeting, Cold Spring Harbor Laboratories, NY, July 2004

Summer Schools and Meetings

- Stanford Summer School in Neuroeconomics, Stanford, CA, July 2006
- Neurophysiology of Decision Making, Banbury Center, Cold Spring Harbor, NY, May 2005
- International Conference on Complex Systems (ICCS), Nashua, NH, June 2002
- Summer school in Nonlinear Dynamics, Zanjan, Iran, June 2000

Honors and Awards

- Lawrence Award in Excellent Teaching, Northeastern University, MA, 2001

- Ranked 9th in National Physics Graduate Exam, Iran, 1998
- Ranked 128th in General Entrance Exam for universities (among 300,000 applicants), Iran, 1994
- Top ten in National Physics Olympiad team, Iran, 1993

Publications

Journal Articles

Soltani A and Wang X-J (2006) A Biophysically-based Neural Model of Matching Law Behavior: Melioration by Stochastic Synapses, *Journal of Neuroscience*, 26(14): 3731-44

Soltani A, Lee D, and Wang X-J (2006) Neural Mechanism for Stochastic Behavior During a Competitive Game, *Neural Networks*, 19(8): 1075-90

Abstracts

Soltani A and Wang X-J (2007) Bayesian inference with stochastic synapses: a neural model of probabilistic decision making.
Computational and Systems Neuroscience 2007

Lo C-C, Soltani A, and Wang X-J (2007) Tuning ramping activity and reaction time by balanced synaptic input in a decision making circuit.
Computational and Systems Neuroscience 2007

Soltani A and Wang X-J (2006) Bayesian inference with stochastic synapses in a decision circuit: a neural model of probabilistic categorization task.
Society for Neuroscience, Abstr 605.9

Soltani A, Carter GC, and Wang X-J (2006) Learning and representation of previous probability in a neuronal model of decision making.
Society for Neuroscience, Abstr 548.23

Soltani A and Wang X-J (2005) Exploring neural mechanisms of a mixed-strategy: a microcircuit model of random decision dynamics in competitive games.
Society for Neuroeconomics 2005

Soltani A and Wang X-J (2004) Exploring the neural basis of the matching law in choice behavior: a cortical network model with reward-gated learning.
Society for Neuroscience, Abstr 668.14