

CONTACT INFORMATION

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Pittsburgh, PA 15232

EDUCATION

Carnegie Mellon University, Pittsburgh, PA August 2012-Present
Currently pursuing joint PhD in Machine Learning and Neural Computation
Advisor: Tom Mitchell, PhD.
All But Dissertation

Princeton University, Princeton, NJ June 2012
B.S.E in Electrical Engineering
Certificates: Applications of Computing, Neuroscience, Engineering Biology, Robotics and Intelligent Systems
Cum Laude, Sigma Xi

DISSERTATION

Title: “Understanding Sentence Reading in the Brain Using Machine Learning for Timeseries”
Committee: Tom Mitchell (Chair), Geoff Gordon, John Anderson, Mark Richardson, and Stanislas Dehaene

PUBLICATIONS

N.S. Rafidi, J.C. Hulbert, P. Pacheco, & K. Norman “Reductions in Retrieval Competition Underlie the Benefit of Repeated Testing.” In preparation.

N.S. Rafidi, & T. Mitchell “Temporal alignment of trials improves the sensitivity of decoding approaches to MEG data.” Poster at oHBM annual meeting 2017

N.S. Rafidi, E.J.C. Laing, & T. Mitchell “The Role of Syntax in Semantic Processing: a Study of Active and Passive Sentences” Poster and Oral Session at oHBM annual meeting 2015 [**Merit Award Recipient**]

E.J.C. Laing, N.S. Rafidi, & T. Mitchell. “Decoding the semantics of words in active and passive sentences from neural activity.” Poster session presented at the biannual international conference on Biomagnetism, Halifax, Canada. 2014

A. Fyshe, E.J.C. Laing, N.S. Rafidi, K. Chang and T. Mitchell. "Decoding the semantics of words in sentences from neural activity." CUNY 27th Annual Conference on Sentence Processing, March 2014.

N.S. Rafidi, K.S. Kravtsov, Y. Tian, M.P. Fok, M.A. Nahmias, A.N. Tait, P.R. Prucnal. “Power Transfer Function Tailoring in a Highly Ge-Doped Nonlinear Interferometer-Based All-Optical Thresholder Using Offset-Spectral Filtering.” IEEE Photonics Journal. Vol 4, No 2, (2012).

J. Chen, A. Demski, T. Han, L.P. Morency, D. Pynadath, N.S. Rafidi and P. Rosenbloom, “Fusing Symbolic and Decision-Theoretic Problem Solving + Perception in a Graphical Cognitive Architecture,” Proceedings of the conference on Biologically Inspired Cognitive Architectures (BICA 2011), Arlington, VA, USA, 2011

M.P. Fok, H. Deming, M.A. Nahmias, N.S. Rafidi, D. Rosenbluth, A.N. Tait, Y. Tian, and P.R. Prucnal, "Signal feature recognition based on lightwave neuromorphic signal processing," Opt. Lett. **36**, 19-21 (2011)

N.S. Rafidi. “High Performance All-Optical Thresholding for High-Speed Interconnects.” Presented in abstract and poster at IEEE High Speed Digital Interconnects Workshop in Santa Fe, NM, May 2011.

PRIOR WORK EXPERIENCE

DeepMind, London, UK Summer 2017
Research Scientist Intern
Neuroscience Team

PRIOR RESEARCH EXPERIENCE

Senior Thesis, Princeton University 2011-2012
Undergraduate Researcher, Computational Memory Lab
Created a Brain-Computer Interface that uses classification of real-time EEG data to enhance learning on the part of the user.

Undergraduate Research Experience, USC Institute for Creative Technologies Summer 2011
Summer Intern, Cognitive Architecture Group
Implemented POMDPs using Cognitive Architecture and thereby extending it to handle goal-directed decision making.
Created graph representation of navigational robot in collaboration with fellow researchers, accepted to BICA 2011.

Independent Research, Princeton University September 2009-Spring 2011
Undergraduate Researcher, Princeton Lightwave Communications Laboratory
Simulated and conducted research on optical thresholding devices as part of the Photonic Neuron project for lightwave neuromorphic signal processing. Published in Optics Letters and attended High Speed Digital Interconnects Workshop.
Developed new thresholding technique submitted to Optics Express.

FELLOWSHIPS AND AWARDS

Carnegie Mellon University Richard K. Mellon Fellowship 2016-2017

Machine Learning Department Teaching Assistant Award 2016

National Science Foundation Graduate Research Fellowship (NSF GRFP) 2013-2016

Merit Award June 2015
Organization of Human Brain Mapping (oHBM) Annual Meeting

Best Poster Award Fall 2013
Center for the Neural Basis of Cognition (CNBC) Annual Retreat

OUTREACH and UNIVERSITY SERVICE

Graduate Student Assembly Vice President of External Affairs Spring 2016-Spring 2017
Promoting civic engagement of graduate students and communicating with policy makers on grad student issues

Technights Volunteer Fall 2012-Spring 2017
Coordinated and taught workshops on the following topics:
Machine Learning, Recommender Systems, Parallel Computing, Markov Models, Signal Processing, Neuroscience

Graduate Student Assembly Representative Fall 2015-Spring 2016

Machine Learning Department PhD Program Admissions Committee Fall 2014

TEACHING

10-725 Convex Optimization Spring 2015
Teaching Assistant

10-701 Introduction to Machine Learning Fall 2014
Teaching Assistant