Connor R. Walsh

111 Hart Street ‖ Brooklyn, NY 11206

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Research Interests	Artificial Intelligence, Machine Learning, Computational Neuroscience

Education

Carnegie Mellon University, Pittsburgh, PA
M.S. in Electrical and Computer Engineering   May 2015
Eta Kappa Nu, *IEEE* Honor Society (HKN), Member
GPA: 3.70/4.00

Rutgers University, New Brunswick, NJ
B.S. **Major**: Physical Oceanography **Minor**: Mathematics   May 2012
Awarded Honors for Academic Achievement & Research Excellence
GPA: 3.21/4.00

Relevant Coursework

Artificial Intelligence, Machine Learning, Computer Vision, Language & Statistics,
Neural Signal Processing, Calculus I-V, Complex Variables, Linear Algebra

Professional Experience

Software Engineer, *Uplevel Security*, New York, NY
September 2015 - Present
- As 1st engineer, contributed to core product & ontological design in addition to building systems critical for ingesting, processing, & analyzing cybersecurity data
- Led R&D efforts in machine learning applied to relational structured data and developed algorithms for predicting latent features and anomalous network activity

Contract Researcher, *Theiss Research*, La Jolla, CA
September 2011 - December 2013
- Directed oceanographic research, analysis, and preparation for publication
- Collaborated with researchers at the Institute of Marine Sciences, Zanzibar, Tanzania and the Florida Institute of Technology

Academic Experience

Teaching Assistant, *Networks in the Real World*, Carnegie Mellon University
January 2015 - May 2015
- Mentored student projects related to social/biological network analysis
- Designed course logistics, content, and oversaw student evaluation

Research Assistant, *System Level Design Group*, Carnegie Mellon University
June 2014 - December 2014
- Developed computational models to simulate social evolution in microbiomes
- Explored novel anti-virulence therapeutics via *in silico* experimentation

Research Technician, *Institute of Marine and Coastal Sciences*, Rutgers University
June - August 2012
- Developed software for turbulent flow particle tracking experiments

Research Fellow, *Institute of Marine Sciences*, University of Dar es Salaam, Tanzania
May 2011- August 2011
- Selected as one of four students funded by NSF/OISE IRES
- Performed empirical and analytic research developing a regional oceanographic model
- Developed and performed a self-formulated study on non-linear tidal dynamics

Course Projects

Machine Teaching Effort/Gains Under Complexity, *Artificial Intelligence, CMU*
January 2015 - May 2015
- Implemented a teaching algorithm designed for inverse reinforcement learners
- Determined the costs and benefits of teaching under varying task complexities

BSbot: Detecting Fraudulent Physics Abstracts, *Machine Learning, CMU*
September 2014- December 2014
- Designed an accurate discriminative classifier to identify computer generated text
- Proposed a novel feature selection algorithm derived from word Hamming distances

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Publications & Presentations

C. Walsh, A. Rangamani, S. Gottlieb, and E. Maida. Learning Maliciousness in Cybersecurity Graphs, *Neural Information Processing Systems*, Tensor Learning Workshop, 2016.

G. Wei, C. Lo, **C. Walsh**, N. L. Hiller, and R. Marculescu. In Silico Evaluation of the Impacts of Quorum Sensing Inhibition (QSI) on Strain Competition and Development of QSI Resistance, *Nature*, 6(10):35136, 2016.

G. Wei, **C. Walsh**, I. Cazan, and R. Marculescu. Molecular Tweeting: Unveiling the Social Network behind Heterogeneous Bacteria Populations, *Proceedings of the 6th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics*, 366-375, 2015.

J. Zavala-Garay, J. Theiss, M. Moulton, **C. Walsh**, R. van Woesik, C. G. Mayorga-Adame, M. García-Reyes, D. S. Mukaka, K. Whilden, and Y. W. Shagude. On the Dynamics of the Zanzibar Channel, *Journal of Geophysical Research*, 120(9):6091-6113, 2015.

C. Walsh, J. Zavala-Garay, D. S. Mukaka, J. Theiss, and K. Zaba. Tidal Dynamics of the Zanzibar Channel in comparison with a regional model, *The 11th American Geophysical Union Fall Meeting*, San Francisco, Poster Session 2011.

Computer Languages

Python, Go, Javascript (ES6), LaTeX, C, MATLAB	(Fluent)
C++, Java, ELisp, x86 assembly	(Prior Experience)
Clojure, Haskell, SuperCollider	(Learning)

Software Tools

Emacs, Git, IntelliJ	(Development)
SciPy, NumPy, Pandas, Matplotlib, SciKit, Jupyter, TensorFlow	(Scientific)
RabbitMQ, Docker, Neo4J, RethinkDB, Redis, MariaDB	(Backend)
React, GraphQL, Webpack, Babel	(Frontend)

Volunteer Work

Computer Science Teacher, *ScriptEd*, Brooklyn, NY
September 2016 - June 2017
- Co-Taught *Programming Fundamentals* twice a week in an inner-city high school classroom
- Delivered lectures, developed lesson plans, and evaluated students' progress
- Worked closely with each student individually, helping them feel empowered while learning

Guest Speaker, *Encountering the Unseen: Puppet-Actualized Lectures on Contemporary Topics in Microbiology*, Phipps Conservatory, Pittsburgh, PA
November 2014
- Delivered lecture on hacking pathogen social networks through computational modeling
- Collaborated with visual artists to transform slide-based content into a live puppet show

Guest Speaker, *S.T.E.M. Career Day*, W. Allen Middle School, Moorestown, NJ
March 2012
- Prepared and presented two forty-five minute presentations on fluid dynamics & modeling
- Illustrated the concept of density stratification with interactive flow tank demonstrations

Eco-Farmer, *Sadhana Forest*, Tamil Nadu, India
May 2008 - July 2008
- Lived and worked on a sustainable, vegan farming community
- Participated in reforestation, water conservation, and community building projects

N + 1 Interests

Music, play piano + drums; released 6 full length albums; toured with bands; scored films
Art & Writing, draw comics; write short fiction; (poorly) paint portraits