

NICASIA BEEBE-WANG

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EDUCATION

University of Washington

PhD Student, Computer Science and Engineering

Seattle, WA
2017 - Present

Advisor: Su-In Lee

Research interests: machine learning and artificial intelligence with applications in health and biology

Current project: using multi-task deep learning and interpretability methods to reveal underlying biological mechanisms of Alzheimer's disease and molecular targets for intervention

Harvard University

B.A. Computer Science, minor in Statistics
Honors: cum laude in field

Cambridge, MA
2017

SKILLS

Programming Languages: Python, JavaScript, HTML/CSS/PHP, R; familiar with C/C++, MATLAB and SQL

Analysis: machine learning, deep learning (Scikit-learn, PyTorch, TensorFlow, Keras)

Other: GPU & cluster computing, web scraping, Unix/Linux/Windows, data visualization

Relevant Coursework: machine learning, artificial intelligence, data visualization, data science, theory of computation, probability, theoretical statistics, linear algebra, differential equations, computational biology

RESEARCH EXPERIENCE

Paul Allen School of Computer Science & Engineering, University of Washington

Graduate Research Assistant

Seattle, WA
2017 - Present

- Employing machine learning models to gain insights from gene expression and health data for individuals with Alzheimer's disease, advised by Professor Su-In Lee.

Harvard University Department of Molecular and Cellular Biology

Undergraduate Research Fellow

Cambridge, MA
2016 - 2017

- Employed deep learning pipelines to process large, next-generation sequencing data on Harvard's high-performance computing cluster. Advised by Professor Sean Eddy.
- Senior thesis: "Towards Learning Regulatory Elements of Promoter Sequences with Deep Learning"

Beth Israel Deaconess Medical Center, Center for Sleep and Cognition

Undergraduate Research Fellow

Boston, MA
2015 - 2016

- Led a study to collect and analyze polysomnography and EEG datasets to investigate the relationship between dysfunctional sleep architecture and abnormal neural responses to stimuli.

Mt. Sinai Medical School: Neuropsychomaging of Addiction & Related Conditions Group

Undergraduate Research Fellow

New York, NY
Summer 2014

- Integrated genetic and fMRI datasets to identify key relationships between a proenkephalin gene polymorphism, error processing, and behavioral traits in cocaine-addicted individuals. Advised by Professors Rita Goldstein and Scott Moeller.

Neuropsychomaging Group, Brookhaven National Laboratory

Research Assistant

Upton, NY
2011 - 2013

- Investigated the relationship between single nucleotide polymorphisms in the dopamine transporter gene and neural responses to drug-related stimuli via EEG.
- Analyzed longitudinal data from cocaine addicted individuals to identify predictors of relapse. Advised by Professors Rita Goldstein and Scott Moeller.

PUBLICATIONS

- Beebe-Wang N**, Celik S, Lee S-I, “MD-AD: Multi-task deep learning for Alzheimer’s disease neuropathology,” *ICML & IJCAI Workshop on Computational Biology*, 2018 (Poster; Preprint available on *BioRxiv*)
- Moeller SJ, **Beebe-Wang N**, Schneider K, Konova A, Parvaz M, Alia-Klein, N, Hurd Y, Goldstein R. “Effects of an opioid (proenkephalin) polymorphism on neural response to errors in health and cocaine use disorder,” *Behavioural Brain Research*, 2015
- Moeller SJ, Parvaz MA, Shumay E, Wu S, **Beebe-Wang N**, Konova AB, Misyrilis M, Alia-Klein N, Goldstein RZ. “Monoamine polygenic liability in health and cocaine dependence: Imaging genetics study of aversive processing and associations with depression symptomology,” *Drug and Alcohol Dependence*, 2014
- Moeller SJ, **Beebe-Wang N**, Woicik PA, Konova AB, Maloney T, Goldstein RZ. “Choice to view cocaine images predicts concurrent and prospective drug use in cocaine addiction,” *Drug and Alcohol Dependence*, 2013
- Moeller SJ, Parvaz MA, Shumay E, **Beebe-Wang N**, Konova AB, Alia-Klein N, Volkow ND, Goldstein RZ. “Gene \times abstinence effects on drug cue reactivity in addiction: multimodal evidence,” *Journal of Neuroscience*, 2013

AWARDS

Jeff Dean - Heidi Hopper Endowed Regental Fellowship in Computer Science & Engineering	2017
Valedictorian of Westhampton Beach High School	2013
National Intel Science Talent Search Semifinalist	2013
National Merit Scholarship Recipient	2013
National AP Scholar with Distinction	2013
Paul Harris Fellowship for Outstanding Commitment to the Community	2013

ACTIVITIES

New Graduate Student Orientation Committee <i>Organizer</i> <ul style="list-style-type: none">Organize welcome events that help incoming PhD students learn about campus resources, departmental policies, and opportunities for community involvement.	2018
Mentorship <i>Society for Women Engineers Mentor</i> <ul style="list-style-type: none">Advise undergraduate women at the University of Washington who aspire to pursue engineering careers.Met monthly to discuss coursework, how to become involved in research, graduate school options, etc.	2017 - 2018
<i>UW CSE Peer Mentor</i> <ul style="list-style-type: none">Meet monthly with new PhD students to offer advice and experiences with adjusting to graduate school.	2018 - Present
Radcliffe Varsity Lightweight Crew <i>Rower</i>	2013 - 2015