

MAYANK AGRAWAL

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EDUCATION

Princeton University

Ph.D. Psychology and Neuroscience

Advisor: Jonathan D. Cohen

August 2018 - May 2023

Swarthmore College

B.A. Computer Science & Philosophy

Thesis: *An Application of Computational Learning Theory to Moral Epistemology*

Advisor: Alan R. Baker

August 2014 - May 2018

GPA: 3.78 / 4.00

University of Oxford

Visiting Student, St. Anne's College

October 2016 - June 2017

PROFESSIONAL EXPERIENCE

Kallyope

Data Science Intern

June 2017 - August 2017

New York, NY

- Early-stage biotech startup developing a platform to research and harness the gut-brain axis
- Combined genomic sequencing data and machine learning algorithms to predict novel hormones
- Identified novel mucins and defensins while hormone candidates are currently undergoing tests

Mercury Fund

Analyst Intern

August 2016 - September 2016

Houston, TX

- Early stage venture capital fund with over \$250 million focusing on companies in the U.S. Midcontinent
- Researched, analyzed, and evaluated startups integrating life sciences with artificial intelligence
- Presented to fund's partners and advisors about fundamentals and landscape of machine learning

Robotics Institute, Carnegie Mellon University

Developer

May 2016 - August 2016

Pittsburgh, PA

- Full-time developer for RoboTutor, project to create educational AI for students ages 7 - 10
- Developed arithmetic tutors and designed motivational agent to instill growth mindset in learner
- Named one of five finalists for Global Learning XPRIZE competition, winning \$1 million

RESEARCH

Action Selection Modeling Group, University of Oxford

Research Assistant

February 2017 - June 2017

Oxford, UK

- Worked under Professor Rafal Bogacz studying Parkinson's Disease and the onset of β -oscillations
- Created mathematical models using local field potential data in order to predict bursting oscillations
- Goal is to allow deep brain stimulation (DBS) to be used as a preventative measure rather than reactive

Aguirre Lab, University of Pennsylvania

Summer Research Assistant

June 2015 - August 2015

Philadelphia, PA

- Worked full-time under Professors Geoffrey K. Aguirre and David Brainard to study melanopsin
- Measured pupil distortion in response to flickering light to characterize nonlinear filters in eye
- Constructed distributed computing setup to automatically communicate and run experiments

PUBLICATIONS

- Moraud, EM, Tinkhauser G, **Agrawal M**, Brown P, Bogacz R. (2018). Predicting beta bursts from local field potentials to improve closed-loop DBS paradigms in Parkinson's patients. In Submission.

TECHNICAL PROJECTS

Spykes

- Open-source Python library created and maintained by Professor Konrad Kording's Lab (Penn)
- Developing new visualization and analytic methods to facilitate neural spike analysis
- Implemented robust testing suite and continuous integration to maintain health as others contribute

GreenMon

- Created peer-to-peer system that dynamically turns on and off nodes in response to cluster usage
- Developed lightweight, scalable algorithm to bypass communication and avoid usage of master node
- Estimated power usage reduction of roughly 80% in schoolwide computing cluster

TEACHING

Swarthmore College

Fall 2017 PHIL 012: Logic, *Teaching Assistant*

Spring 2015 CPSC 021: Introduction to Computer Science, *Teaching Assistant*

Breakthrough Houston

Summer 2014 8th Grade Math, *Teaching Fellow*

Summer 2013 7th Grade Math, *Teaching Fellow*

Summer 2012 7th - 9th Grade Literature, *Teaching Assistant*

TALKS

2017 Predicting Novel Gut Hormones, *Kallyope*

2016 Machine Learning: Fundamentals and the Business Landscape, *Mercury Fund*

2016 GreenMon: Peer to Peer Cluster Management, *Swarthmore College*

HONORS & AWARDS

2017 Computational Neuroscience Travel Grant, *Swarthmore College*

2016 John W. Nason Community Service Fellowship, *Swarthmore College*

2014 Philip Evans Scholar, *Swarthmore College*

SERVICE

2017 - Aydelotte Foundation, *Swarthmore College*

2017 - Council on Educational Policy, *Swarthmore College*

2015 - 2016 Student Academic Mentor, *Swarthmore College*

TECHNICAL SKILLS

Computer Languages

Python, C++/C, Java, MATLAB, R

Tools

L^AT_EX, Unix, git, OpenCV, MPI, Android Studio, CUDA