Ross McKinney

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Technical Skills

Programming
- o Python, Javascript, SQL, C++, C#
- o Unix, Bash, Git

Scientific Computing
- o Numpy, Scipy, Pandas, Scikit-learn, Scikit-image
- o Matplotlib, D3.js, Bokeh

Machine Learning
- o Classification, Regression, NLP, Image Processing

Web Development
- o HTML/CSS, jQuery
- o Heroku, Flask, Django

Experience

Graduate Student | Washington University
Aug 2012 - Apr 2019
St. Louis, MO

- Designed experiments and applied quantitative genomics, machine learning, and computer vision to identify genes and neurons important for directing social behaviors in the fruit fly
- Developed three Qt-based graphical user interfaces for the acquisition, tracking, and analysis of animal behaviors, and utilized these programs to analyze 4TB+ of video data
- Applied signal processing techniques, including sliding window, FFT, and wavelet analysis, on timeseries data to generate salient features for classification algorithms
- Trained and validated boosted decision trees and neural networks to classify animal behaviors with >95% accuracy

Research Supervisor | Washington University
Aug 2013 – Dec 2018
St. Louis, MO

- Provided mentoring to 3 high school and 5 undergraduate students
- Developed research proposals, trained students in experimental techniques, and helped students cultivate skills in critical thinking and scientific writing

Guest Lecturer | Washington University
Aug 2013 – Dec 2015
St. Louis, MO

- Presented lectures on sensory processing to multiple undergraduate and graduate-level courses, totaling more than 300 students

Research Technician | Massachusetts Institute of Technology
Aug 2010 – May 2012
Cambridge, MA

- Designed experiments to determine how transcriptional speed affects memory formation
- Generated an array of genetic constructs to determine regions of DNA associated with transcriptional activation kinetics

Education

Ph.D. in Neuroscience | Washington University in St. Louis
Apr. 2019

B.S. in Biochemistry | Miami University
May 2010

Personal Interests

- Compete in national-level rock climbing competitions — 2008 – Present
- Volunteer for Beta Fund, a non-profit dedicated to protecting and maintaining lands for recreational use — 2014 – Present