

John Day

44328 Whitefish Bay • Clinton Township, MI 48038 • johnmday@umich.edu • (586) 307-2758

EDUCATION

University of Michigan

Ann Arbor, MI

Spring 2020

- Dual Degree: Computer Science and Neuroscience – GPA: 3.5/4.0
- Relevant Coursework: Data Structures & Algorithms (EECS 281), Computer Organization (EECS 370), Web Systems (EECS 485), Computer Security (EECS 388), Programming in the Life Sciences, Discrete Math, Linear Algebra, Cell & Molecular Neuroscience, Behavioral Neuroscience, Animal Physiology, Orgo I, Linguistic Analysis

TECHNICAL SKILLS

Proficient: C++, Python, MATLAB, Git, Unix

Familiar: C#, C, Unity, R, SQL, .NET, HTML, CSS, CAD, VR/AR

PROFESSIONAL EXPERIENCE

Neurable Inc.

Boston, MA

Summer 2018

Backend Software Development Intern

- Built application for sending live brainwave (EEG) data across computers and integrating the data into the API, allowing Neurable to work on mobile devices such as Microsoft HoloLens and Android phones; built using Unity, C#, and TCP
- Designed tests to assess the generalized performance of machine learning algorithm using exhaustive cross-validation
- Optimized Neurable's architecture by allowing for parallelized training and testing of ML models

Life Sciences Institute, S. Xu Lab - University of Michigan

Fall 2016 – Fall 2018

Research Assistant on Improved Behavioral Analyzation Methodology using Machine Learning with Dr. Adam Iliff

- Designed Matlab program using transfer learning on a pre-trained deep neural net to track worms from video recordings and predict specific behavioral features; spoke about project at multiple conferences nationwide
- Analyzed current and potential approaches to automatic behavior interpretation using computer vision

Research Assistant on Novel Sensory Transduction in C. elegans with Dr. Adam Iliff

- Investigated possible sensory receptors responsible for the sensory transduction of baroreception in the model organism
- Conducted behavioral assays on candidate null mutants and analyzed differences in behavioral response data, providing the lab a refined understanding of the unknown sensory mechanism and involved genes

MCubed Research Fellowship - Dr. Mark Lindquist and Dr. Bruce Maxim

Summer 2017

- Designed study to evaluate how perceiving experiences with VR affected physiological state
- Built VR environments using Unity and C# for Oculus Rift to support the study

ACTIVITIES

Neuroprosthetics Club - Software Team Lead

- Construct executable plans to achieve the goals of the team each week, distributing tasks to 10+ other software members
- Implementing algorithm using SVM to classify user intent to control prosthetic device using electrophysiological data

Michigan Bio-Software - Presentation Chair

- Wrote backend code for threaded commenting system for the open-source protocol repository website
- Gave presentation at the 2017 International iGEM Competition in Boston, representing Michigan Bio-Software

MUSIC Matters - Community Service Organization

- Organize music festivals and other fundraising events that support service projects and local community scholarships

PROJECTS

- Computer Vision program for animal tracking
 - Utilized MATLAB Computer Vision toolbox
 - Used to track *C. elegans* nematode movement for neurobiology studies
- Unity Chat Server (*Find on github.com/jday54*)
 - Chat app allowing computers (incl. HoloLens) to send messages through a server-client TCP connection
 - Used Unity GUI, C#, .NET Core, and .NET Framework

ACHIEVEMENTS

- 2nd place in international poster presentation competition at CeNeuro *C. elegans* Neuroscience Conference 2018
- Poster presentation at the regional Midwest *C. elegans* Meeting
- Ted Bates Memorial Community Service Award: For significant dedication to volunteer service
- University Honors, per semester