Jonah Kohn

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PROFILE

Resourceful college senior with software development experience, seeking to work collaboratively and cultivate my skillset. Passionate about deep learning, design, and neuroscience research.

EDUCATION

Reed College, Class of 2021   *Portland, OR*
Studying toward B.A – <u>Interdisciplinary Major in Computer Science and Neuroscience.</u>

EXPERIENCE

Google – Software Engineering Intern, May 2020 – August 2020   *Portland, OR*
Wrote code for TensorFlow and Keras, coordinating with the team to fix bugs and add user-requested features, including a few collaborations with machine learning researchers. Contributed to the Keras open-source library. Designed and published the first-ever code examples and walkthrough guides for TensorFlow Cloud, an interface which allows users to run large-scale machine learning projects distributed over Google Cloud hardware. These code examples are currently featured on the Keras and TensorFlow websites.

Allen Institute for Brain Science – Software Engineering Intern, June 2019 – August 2019   *Seattle, WA*
Developed image processing pipeline for cell-recognition task by training an image segmentation deep-learning network, analyzing data collected via confocal microscopy. Designed and implemented infrastructure around this neural network to eliminate a data "choke-point" that had been slowing analysis on one of the Institute's ongoing research projects. This enabled 18 months of manual annotation to be completed in 3 months. Co-author on pending research paper which benefitted from this software.

PROJECTS AND COURSES

Senior Thesis Research – Conducting interdisciplinary research by training convolutional neural network to label synaptic plasticity in images of in-vitro neurons treated with psychoplastogens. This will allow neuroscientists to gain new perspective into the visual markers of synaptic plasticity and may lead to new methods of quantifying neuroplastic changes.

Facebook Memcached – Built a functional replica of the Memcached system in C++ with an eye toward low-level optimization and lookup speeds, capable of performing lookups across computers via REST API. Design primarily based on Facebook's publication by Nishtala et al.

Cancer Protein Prediction Algorithms – Implemented a dynamic Yen's k-shortest path algorithm in Python to perform frequency analysis over paths in a protein-protein interaction network, with the goal of predicting candidate regulators of non-muscle myosin. Results were contributed to Reed biology research.

Relevant coursework – Algorithms and Data Structures, Artificial Intelligence, Computer Networks, Computer Systems, Computational Biology.

SKILLS

Python – 4 years of experience developing code for personal projects and Reed courses.
C++ – 3 years of experience developing code for Reed courses.
Machine learning – 2.5 years of experience designing models in TensorFlow and Pytorch.
Linux – 3 years of experience writing code in Linux-based environments.

AWARDS

Issued Patent (July 2015): US 9088839 B2, Multimedia Auditory Augmentation – For sound technology that I began developing at age 13.
Google Science Fair (International) – *Category Winner* (one of three among 10,000+ applicants)
White House Science Fair – National, by invitation only
California State Science Fair – First in Cognitive Science, with a Special Award from the UCLA Brain Research Institute.
Capita Foundation Grant – Only non-Ph.D. recipient of a research grant in history of the foundation.

INTERESTS

Backpacking – Skiing – Rock Climbing – Outdoor Cooking – Guitar making – Woodworking