Alexander O. Schwartz

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SKILLS

Languages: Python, R, Julia, C, SQL, HTML/CSS
Tools/Technologies: Git, Pandas, Jupyter Notebook, Docker, High Performance Computing, Flask, R Markdown

EDUCATION

BSc. Biochemistry and Molecular Biology Carlisle, PA | May 2016
Dickinson College
Courses: Harvard's CS50, Coursera's Docker Essentials, Using Databases with Python, Using Python to Access Web Data

WORK EXPERIENCE

NATIONAL INSTITUTES OF HEALTH, LABORATORY OF BIOLOGICAL MODELING |
Post-Baccalaureate Fellow, Intramural Research Training Award Bethesda, MD | Oct 2020 – present

- Developed code in **Python** for computationally modeling the COVID-19 pandemic using the NIH high performance computing environment Biowulf; created interactive tools to view results using **Rshiny**.
- Investigated if extensive synaptic pruning during training in a spiking neural network results in a network structure uniquely associated with the trained task. Coded in **Julia**.

DICKINSON COLLEGE, BIOLOGY DEPARTMENT | Software Developer Carlisle, PA | May 2020 - Oct 2020
The Boback lab studies patterns in snake basking activity, among other projects. Using wildlife cameras focused on snake den entrances in the woods, the lab remotely collects images every 15 minutes from sunup to sundown in the spring and fall.

- Built a custom object detection platform to detect and count rattlesnakes in wildlife camera data using **Python**, **ImageAI**, and the object detection algorithm YOLOv3.
- Trained research students on how to create model training data, design and deploy models, and validate model performance.

THE RNA MEDICINES COMPANY | Senior Research Associate Bedford, MA | Oct 2016 – June 2019
The RNA Medicines Company was focused on building a proprietary small molecule drug discovery platform for targeting small non-coding RNAs. It was a subsidiary of Beryllium Discovery (2014-2017) and subsequently a subsidiary of UCB Pharmaceuticals (2017-2019).

- Developed and supported a high throughput small molecule screening campaign.
- Cultivated mammalian cell cultures; engineered stable cell lines; ran in-vitro functional cell-based assays; performed biochemical and phenotype characterization; handled data analysis and reports for all of my experiments.
- Led lab space build-outs; managed outside contractors to develop regulatory compliance programs, deliver liquid nitrogen and CO2, remove bio-hazard waste, and provide lab coat services.

PERSONAL PROJECTS

LANGUAGE LEARNER'S QUIZ | Python, Flask, Docker
This Python-Flask application uses JSON representations of vocabulary dictionaries to help users learn a language via flashcards. The inspiration behind it came from living in Berlin, Germany, in the Fall of 2019 where I was taking language courses.

TWILIO RIDDLER | Python, Flask, APIs
This application sends a user an SMS of a random riddle, listens for their response via a Twilio webhook, and sends either the answer or a new riddle.