

AARON YAO-SMITH

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EDUCATION

Cornell University, Ithaca, NY

August 2017 - Present

Computer Science, B.S., May 2021; GPA: 3.78 of 4.00

Rel. Coursework: Data Structures & Functional Programming (CS 3110) · Discrete Structures · Intro. to Data Science

EXPERIENCE

Singer Lab, Dana-Farber Cancer Institute and Harvard Medical School

May 2018 - Present

Research Assistant, Biostatistics and Computational Biology

Boston, MA

- Independently designed/developed single-cell RNA sequencing statistical analysis tool for cell cluster prediction using novel hypergeometric methodology; reducing predictive error by >20% over traditional t-test
- Created public-facing web interface using Python/Flask backend; currently in open beta for research use
- Modeled statistical relationships using Python data stack: pandas, scipy, matplotlib
- Research abstract accepted and presented at conference (Single Cell Genomics, Broad Institute of MIT and Harvard, Cambridge, MA; October 29-31, 2018. Program at weizmann.ac.il/conferences/SCG2018/program.)
- Optimized algorithm continually: reducing initial script's >6 hour sample dataset runtime down to 6 minutes

AIDE Code Team, AguaClara Cornell

September 2018 - Present

Subteam Lead

Ithaca, NY

- Project manager for team of 4 handling overall direction and delegation with Github Issues
- Jointly managed parent team's repository ('AIDE') with devops tools: Travis, AppVeyor
- Created tool to generate water pipe network CAD drawings from line sketches: using Onshape's "Featurescript"
- Develop user-friendly web app generating minimal-cost water treatment plant designs given parameters of individual communities using web stack: Flask, React, PostgreSQL, DigitalOcean
- AguaClara Cornell has partnered with local NGOs to provide clean water to 83,000 in Honduras and Nicaragua

Steffel Lab, D'Amore-McKim School of Business, Northeastern University

May 2018 - August 2018

Developer/Research Assistant

Boston, MA

- Independently designed/developed web implementation of psychological marketing research study later deployed to experimental group of 300 subjects
- Python web stack: Django, Bootstrap, Heroku, combined with Python's "oTree" research study framework
- Collated qualitative design specifications from 5 researchers (professors and PhD student) at 3 universities
- Trained two new full-time graduate RAs in order for later deployment to larger audience using AWS/mTurk

PROJECTS AND OTHER LEADERSHIP

'COMET: Identifying candidate marker panels.'

github.com/aaronyaosmith/HG_marker_detection

Statistical analysis tool designed for use by cell biology researchers. Available at cometsec.com. Python data/web stack.

'Incentive compatible disclosure' marketing study

github.com/aaronyaosmith/ICD_survey

Incentive-based multi-subject study, with interaction between subjects via web interface. Python web stack.

Co-Founder, Team 6731, FIRST Robotics

2016 - 2017

Co-lead for team of 20. NE District Rookie Inspiration Award, 2017. NE District Rookie All Star Award, 2017.

SKILLS

Python (Flask, Django, pandas, scipy, matplotlib) · Javascript/HTML/CSS (React, Bootstrap) · SQL (PostgreSQL) · C++ · Java · OCaml · Linux · Bash · Git · Vim · Emacs

OTHER INTERESTS

Coursework: Waves/Thermal Physics, Honors · Mathematical Physics I (Complex Analysis, Tensors) · Electronic Materials

Activities: Cornell Taiwanese American Society · Delta Kappa Epsilon · Guitar/Voice · Cycling