

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 · 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

- Designed and implemented from scratch tool for statistical analysis of RNA sequencing data (Python: pandas)
- Tool uses novel statistical method to find multi-gene sets marking specific cell type. Traditional methods used in current research are limited to single-gene markers; this is less specific and thus less effective in cell type prediction
- Reduced predictive error by >20% over single-gene in most 2-gene cases; further reduction expected for ≥ 3 -gene
- Research abstract was 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 code'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 3 other developers, handling task delegation, team direction, and recruitment
- Develop open-source tool generating minimal-cost water treatment plant designs parametrically given needs of individual community, reducing time-cost and barrier to entry for those without clean water (Python)
- Automate existing CAD modeling processes using Onshape's "FeatureScript" scripting language
- 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 and implemented web-based psychological research study (given research specifications)
- Deployed study to preliminary experimental group of 300 subjects (Heroku, Django, Python: oTree)
- 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 Amazon mTurk

PROJECTS AND OTHER LEADERSHIP

'COMET: Identifying candidate marker panels.' github.com/aaronyaosmith/HG_marker_detection

Statistical analysis tool designed for research use. CLI and data visualization. Available at cometsc.com. Python.

'Incentive compatible disclosure' psychological study github.com/aaronyaosmith/ICD_survey

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

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.

Recruited members, organized meetings and team structure. No town FIRST Robotics team existed prior.

SKILLS

Python · C++ · Java · JS/HTML/CSS · C# · OCaml · F# · Scala · Matlab · Unix/Linux (Bash, vi, etc.) · Git

OTHER INTERESTS

Coursework: Waves and Thermo., Honors · Math. Phys. (Complex Analysis, Tensor Algebra) · Electronic Materials

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