

# AARON YAO-SMITH

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## EDUCATION

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**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

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**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  $\geq 3$ -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](http://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 developed web-based implementation of psychological marketing research study
- 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

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**'COMET: Identifying candidate marker panels.'** [github.com/aaronyaosmith/HG\\_marker\\_detection](https://github.com/aaronyaosmith/HG_marker_detection)

Statistical analysis tool designed for research use. CLI and data visualization. Available at [cometsc.com](http://cometsc.com). Python.

**'Incentive compatible disclosure' marketing study**

[github.com/aaronyaosmith/ICD\\_survey](https://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

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

## OTHER INTERESTS

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

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