Michael Truell

CV

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Education

2014–Present **High School**, *Horace Mann*, New York.

- **Expected Graduation** - June 2018
- **GPA Unscaled** - 3.96
- **Relevant coursework** - AP Chemistry (A), AP Biology (A), Precalculus BC Honors (A+), Honors Physics (A), Honors Algebra II and Trigonometry (A), Honors Geometry (A), Computer Science (A), Science Research (A), Chemistry (A), Biology (A)
- **Standardized Tests** - 750 on PSAT Math (2016), 740 on PSAT English (2016), 5 on Physics I AP (2016), 800 on Molecular Biology SAT II (2015), 800 on Chemistry SAT II (2015), 99 percentile on SSAT (2013)

Research and Work Experience

2016–2017 **Software Engineering Intern**, *Two Sigma*, New York.

Over the course of 8 weeks of summer and throughout the fall and winter of 2016, I developed an internal programming competition for Two Sigma, one of the largest hedge funds in the US. They liked it so much that they funded a public release (halite.io).

- Attracted 1250+ users that have submitted 8900+ bot updates and written 1400+ forum posts
- Project has seen 60+ individual contributors from the open source community
- Aided in design of game meant to break traditional AI
- Built and maintained the competition website - an HTML/JS/CSS frontend (with modded bootstrap and jquery) that interfaces with a LAMP backend hosted on RDS, EC2, and S3
- Built and maintained the competition backend infastructure - a series of autoscaling EC2 servers that run games and auto-compile untrusted competitor source in a sandbox; managed by a REST API

2015–2016 **A Universal Robotic Control System using Reinforcement Learning with Limited Feedback**, *Reinforcement Learning Research*.

Research project that improved the data efficiency and speed of reinforcement learning as applied to robotics.

- Won top awards at NYCSEF and ISEF and was recognized by CERN and NASA
- Learns from humans with four times less data than the current industry standard
- Runs with no noticable latency on cheap ($5) off-the-shelf electronics
- Whole algorithm implemented in vanilla C++ (no libraries) to allow quick running on embedded electronics

Honors and Awards

- Second Place in the Category of Robotics and Intelligent Machines at ISEF

- First Place CERN Award at ISEF (award included a week at the CERN campus)
- Second Place NASA Award at ISEF
- First Award in Computer Science at NYCSEF
- Intel Excellence in Computer Science Award at NYCSEF
- American Computer Science League 2016 All-Star Team
- First Robotics Competition 2016 Highest Ranked Regional Rookie Team

Extracuriculars

- Leader and Founder of American Computer Science League Team
- Head of Programming and Electronics for FRC Team 5806
- Leader and Founder of Programming Club
- Varsity Cross Country (2.5 mi)
- Varsity Outdoor Track Runner (3200m, 800m)
- Pianist since age of 8
- CTO for Student Government
- CTO for the School's Weekly Newspaper

Projects

- Fido - An open-source C++ machine learning library for embedded electronics and robotics; 300+ stars on Github
- New York Computer Science League - Algorithmic programming competitions for high school students
- Sea Urchin Embryology - An investigative study into raising sea urchins in a cost-effective manner from the moment of insemination to adulthood
- Homer 2.0 - Text generation in the style of Homer's Illiad and Odyssey using character-level recurrent neural network models

Computer skills

Programming Languages	C, C++, Java, Javascript, PHP, Python	Embedded Systems	Raspberry Pi, Arduino, NI RIO, ESP8266
Machine Learning	Evolutionary Algorithms, Deep Neural Networks, Reinforcement Learning	Noteworthy Tools	Tensorflow, Keras, Docker, Flask
Databases	MongoDB, MySQL	Markup	LaTeX, Markdown, HTML