Michael Truell

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EDUCATION

MIT, BS in Computer Science, 5.0/5.0 GPA, Cambridge, MA — Class of 2022
· Some past courses: algorithms, real analysis, probability, AI data structs (grad), organic chem, lab bio
· Current courses: advanced algos (grad), inference systems (grad), abstract algebra, cell biology
· Activities: Undergrad Research (UROP), Teaching High Schoolers (Cascade/HSSP), Sloan Business Club

Horace Mann School, 4.0 GPA Unscaled, Bronx, NY — Class of 2018

EXPERIENCE

Google, *SWE Intern*, — May 2019 - August 2019
· Used BERT/XLNet (attention-based NLP architectures) to improve Google's Discover news feed algorithm.
· First use of XLNet in a Google product. Integrated several other document signals into our algorithm.
· Launched live experiments on 100M+ users. Improved click/view metrics.

Broad Institute, *Undergraduate Researcher*, Regev Lab — February 2019 - Present
· Working on improving GPCR binding prediction using compressive sensing, Bayesian methods, and deep models.
· Exploring improvements to unsupervised latent chemical models (i.e. VAEs for chemicals).

IBM Research, *Research Extern*, — January 2019 - February 2019
· Worked on improving state representation in planning problems using heirarchical, discrete VAEs.
· Planned submission to ICLR 2020.

Two Sigma Investments, *SWE Intern*, — June 2018 - August 2018
· Returning developer on Halite; worked on web experience, new game, software tooling.
· Explored ML-oriented game testing (Deep RL & Conv Nets). Spoke at Google NEXT and the CSTA conference.

MIT Probabilistic Computing Lab, *Research Intern*, RSI Scholar — June 2017 - August 2017
· Added new data processing capabilities to the BayesDB research project (probabilistic modeling system).
· Analyzed diabetic patient data using Bayesian nonparametrics. Identified systematic lapses in care.

Two Sigma Investments, *SWE Intern*, — June 2016 - March 2017
· Co-founded Two Sigma's "Halite" online programming competition (https://halite.io).
· Series drew 10k+ users, 100k+ bots, and 100+ OSS contributors.
· Lead on backend and website (LAMP, AWS, Bash, Docker); Dev on game engine, user packages, game UI.

Independent Reinforcement Learning Researcher — June 2015 - May 2016
· Built Q-learning successor with novel action & model selection; 4x incrase in sample efficiency.
· Project recognized by NASA, CERN, Intel. Spun off codebase into popular open source library.

AWARDS & HONORS

ACM/CSTA Cutler-Bell Prize: 10k Scholarship
Intel ISEF Grand Award: Second Award in Robotics and Intelligent Machines
Intel ISEF Special Award: NASA Second Award; CERN First Award (included week at CERN campus)
New York City Science and Engineering Fair (NYCSEF): First Prize in Computer Science
Intel's Excellence in Computer Science Award
American Computer Science League National Competition: Perfect Programming Score

TALKS & PAPERS

Truell, M./Sanger, A. (2019). *Learning Augmented Bayesian Count-Min.*

Truell, M./Spector, B., Kenyon, E., and Clapauch, J. (2018). *The Halite AI Competition*, Google Cloud Next.

Truell, M., Gruenstein, J. (2016). *A Universal Robot Control System Using RL with Limited Feedback.*

SKILLS

Software	Python, Java, C++, PHP/LAMP, JS, HTML, Docker
ML	NLP, VAEs, Deep Learning, Reinforcement Learning, Evolutionary Algos, Bayesian Methods
Math	Analysis, Group Theory, Linear Algebra, Discrete Math, Multivariate Calculus
Hardware	OpenSCAD, AVR, ESP8266, NI