

# Michael Y. Yu

55 River Oaks Pl. Apt 745 San Jose CA 95134 • +1 (669) 235-2506 • myy2357@gmail.com  
linkedin.com/in/m2357 • github.com/yumichael

**Key skills:** Python, Numpy, Pandas, Matplotlib, XGBoost/LightGBM, C, C++, Javascript/Typescript, React Native

## POSITIONS

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### Intel (PSG)

*Software Development Engineer*

**San Jose, CA**

*Jun 2018 – now*

- Worked with senior engineers to determine what data was needed to diagnose FPGA compiler results gap
- Created Python tools to process data (logs and xml) and make visualization plots to diagnose those issues
- Wrote hooks in C++ codebase to dump needed data and fixed various bugs

### A Thinking Ape (Y Combinator backed social-mobile games company; millions of installs)

*Software Developer Engineer, Intern*

**Vancouver, BC**

*Apr – Aug 2013*

- Full-stack development on main product line of games at profitable <20 engineers start-up
- Designed and implemented account management UI on iOS and Android for new user ID system which tracked the same player on multiple devices via Facebook or email
- Devised new algorithm for matching ~500 player teams in battle on Django server backend
- Collaborated with product manager to determine match metrics and created over 200% more quality matches

### BTI Systems (cloud and metro networking company, now acquired by Juniper Networks)

*Web Developer, Intern*

**Ottawa, ON**

*Feb – Jun 2012*

- Created web application for visualizing bug statistics using jQuery backed by PHP and SQL

## PROJECTS

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*The Resistance game React Native mobile app*

*Mar 2019 – now*

- Simplified real-time player interactions (including chat) implementation using Firebase and reactive pattern
- Maintained codebase health with React best practices, state abstractions using MobX, and custom React hooks

*Two Sigma Kaggle Competition*

*Sep 2018 – Jan 2019 (results in Aug 2019)*

- Built key based feature generation management system so experimental features can be turned off on the fly
- Invented a DSL to describe a probability distribution of features from which to sample and cross-validate on

*G-Research Financial Forecasting Challenge (\$30,000 prize Kaggle style data science competition)*

*Feb – Apr 2018*

- Finished 15<sup>th</sup> / 404; first place explains 43.5% of private leaderboard's target variance, mine explains 42.0%
- Invented a greedy linear model for picking out good features which needed Numba JIT speedup
- Wrote weighted versions of stats functions and MultiIndexing/reshaping utility code that Pandas was missing

*Raytracer 3D scene renderer*

*Apr 2016*

- C++ raytracing engine that uses "distributed ray tracing" to render realistic lighting
- Profiled with Visual Studio to identify a caching opportunity in starter matrix utility code to run 10× faster

*Putnam Competition*

*Dec 2013*

- Scored 30, which is rank 216 / ~ 4000

## EDUCATION

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### University of Toronto

*M.Sc. Mathematics (GRE Mathematics Subject Test score: 900 — 97 percentile)*

*H.B.Sc. Mathematics Specialist and Computer Science Major (CGPA: 3.87/4)*

**Toronto, ON**

*Sep 2016 – Nov 2017*

*Sep 2012 – Jun 2016*

- Received \$40,358 in academic awards and \$36,500 in NSERC research grants
- Finished Math Ph.D. course requirements (5/7 courses completed as undergrad) with A+ average
- Only one Specialist or two Majors is required for H.B.Sc degree completion