Michael Y. Yu

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Key skills: understanding of advanced math and computer science theory, Python, C, C++, Numpy, Pandas, XGBoost

Education

University of Toronto **Toronto, ON**
M.Sc. Mathematics (GRE Math Subject Test score: 900 — 97 percentile) *Sep 2016 – Nov 2017*
H.B.Sc. Mathematics Specialist and Computer Science Major (CGPA: 3.87/4) *Sep 2012 – Jun 2016*

- Predicted the sign of future short term VIX price change with 62% accuracy in M.Sc. thesis (see Projects section)
- Received $40,358 in academic awards and $36,500 in NSERC research grants
- Finished Ph.D. course requirements (5/7 courses completed as undergrad) with A+ average
- Completed the extra Computer Science Major on top of 1 required Specialist for undergraduate degree

Experience

University of Toronto **Toronto, ON**
Teaching Assistant for Calculus Courses *Sep – Dec 2016, Sep – Apr 2014, 2015*

- Taught tutorial classes: explaining concepts and taking up problems, creating and marking quizzes

University of Toronto **Toronto, ON**
NSERC Undergraduate Researcher *May – Sep 2015, Apr – Aug 2014*

- 2015 topic: representation theory of the symmetric groups and how things change when characteristic > 0
- 2014 topic: some introductory level algebraic number theory readings

A Thinking Ape Inc. (mobile games company with millions of installs on 4 stars games) **Vancouver, BC**
Software Developer Engineer, Intern *Apr – Aug 2013*

- Full-stack development on main product in this already profitable <20 engineers start-up
- Designed and implemented account management UI on iOS (Objective-C) and Android (Java) 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 (Python) server backend
- Collaborated with product manager to determine match metrics and created over 200% more quality matches

BTI Systems Inc. (cloud and metro networking company, now acquired by Juniper Networks) **Ottawa, ON**
Web Developer, Intern *Feb – Jun 2012*

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

Projects

G-Research Financial Forecasting Challenge ($30,000 prize Kaggle style data science competition) *Feb – Apr 2018*

- Currently 16$^{\text{th}}$ / 259. First place explains 71% of target's variance, mine explains 70%, median explains 59%.

Predicting short-term movement direction of the volatility index (VIX) (M.Sc. thesis) *Jan – Sep 2017*

- Determined feasibility of machine learning approaches and crafted various features for XGBoost in Python
- Predicted the sign of 1–6 days return, with 55%–65% accuracy in specific cases, on test data of latest 2 years

Grade summary web application (helpful tool for course I TAed) *Nov 2016*

- Flask (Python) web app that shows grade histograms across different tutorial sections from web scraped data

Raytracer 3D scene renderer (graphics course project) *Apr 2016*

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

Putnam Competition (famous undergraduate level mathematics competition where the median score is 1) *Dec 2013*

- Scored 30, which is rank 216 / ∼ 4000