Michael Y. Yu

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EDUCATION

University of Toronto   **Toronto, ON**
M.Sc. Mathematics (GRE Math Subject Test score: 900 — 97 percentile)   **Sep 2016 – Sep 2017**

- Predicted the sign of future 3 days VIX price change with 60% accuracy in thesis (see Projects section)
- Sample graduate courses from all taken up to date: real analysis, algebra, topology, probability, computability and logic, quantum mechanics, set theory, graph theory, topic courses: number theory, geometry, ergodic theory

University of Toronto   **Toronto, ON**
H.B.Sc. Mathematics Specialist and Computer Science Major (CGPA: 3.87/4)   **Sep 2012 – Apr 2016**

- Received $40,358 in academic awards and $19,000 in NSERC research grants
- Finished 5/7 Math Ph.D. course requirements with 91.4 average; have scored 30 on Putnam
- Completed the extra Computer Science Major on top of 1 required Specialist

EXPERIENCE

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

- 2015 topic: the modular representation theory of the symmetric groups
- 2014 topic: basic algebraic number theory

University of Toronto Mathematics Department   **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

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

- Designed and implemented account management UI on iOS and Android for new user ID system
- 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 Inc. (cloud and metro networking company)   **Ottawa, ON**
Web Developer, Intern   **Feb – Jun 2012**

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

PROJECTS

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

- Determined feasibility of different machine learning approaches and engineered various features
- Predicted the sign of 3 days return with 60% accuracy on test data of latest 2 years with XGBoost based model

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

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

Original image recognition experiment on MNIST (no success)   **May – Aug 2016**

- Purely unsupervised learning of image classes through "convolutional k-NN" architecture with Theano

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

- C++ raytracing engine that uses distributed ray tracing to render realistic lighting