

# Eric Bannatyne

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## Education

- Sept. 2013 – Present **University of Toronto, Toronto, ON.**
- Bachelor of Science, specialist in Computer Science, minor in Mathematics.
  - Currently enrolled, expected graduation May 2017.
  - Dean's List 2013 – 2016. Recipient of UofT President's Entrance Scholarship. GPA: 3.9/4.0

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## Projects and Extracurriculars

- Sept. 2016 – Present Research project: Parallel algorithms in MapReduce for the Earth Mover's Distance problem (minimum-cost geometric bipartite matchings), with Aleksandar Nikolov.
- Jan. 2016 – May 2016 Research project in computational complexity theory: Branching program complexity, towards separating log space from polynomial time, under the supervision of Steve Cook & David Liu.
- Apr. 2016 Developed system for performing visual speech recognition (automatic lip reading) from video using hidden semi-Markov models.
- Jan. 2016 Contributed to development of Paper2L<sup>A</sup>T<sub>E</sub>X at UofTHacks: A system for automatically recognizing and generating LaTeX code for graph structures based on hand-drawn images.
- Aug. 2014 – Dec. 2014 Published and maintained the Android app Copic Colour DB on the Google Play Store.
- Apr. 2010 – Present Developer of personal open source projects on GitHub at <https://github.com/alddld>.

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## Skills

- Computer Languages: Fluent in Python, Java, C, PHP, HTML, CSS. Familiar with C++, JavaScript, Racket, Haskell, MATLAB.
- Tools & Technologies: Machine Learning, Algorithm Design, Distributed Algorithms, Natural Language Processing, Information Retrieval, MapReduce, Android, Linux/Unix, JUnit, Django, Git, Subversion, SQL.
- Electronics: Soldering, breadboarding, PCB design, programming for Arduino and PIC microcontrollers.

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## Experience

- May 2016 – Aug. 2016 **Software Engineering Intern, Facebook, Seattle, WA.**
- Created a news videos search results module, and developed models to improve video results ranking for newsy search queries.
  - Leveraged video subtitles, generated automatically via speech recognition technology, to improve retrieval and ranking of videos.
- May 2015 – Aug. 2015 **Software Engineering Intern, Google, Mountain View, CA.**
- Implemented software in Java for the Risk Engineering team, using methods from machine learning and statistical analysis to perform payment fraud detection.
  - Main project: Automating training of lightweight models for low-latency fraud classification.
  - Researched, developed methods for feature selection, data preprocessing and model training.
  - Adapted decision tree learning algorithms to efficiently use data parallelization.
  - Designed distributed pipelines for processing large quantities of data in parallel.
- Sept. 2014 – Present **Teaching Assistant, University of Toronto Department of Computer Science, Toronto, ON.**
- Led tutorials and labs, performed grading duties for assignments, projects, and exams.
  - TA for CSC207: Software Design (Fall 2014, Fall 2015) and CSC263: Data Structures and Analysis (Winter 2015, Winter 2016, Fall 2016).
- May 2014 – May 2015 **Web Developer, The Varsity, Toronto, ON.**
- Developed a new WordPress theme for the magazine website, as well as plugins to achieve functionality specific to The Varsity's website and to maximize efficiency and maintainability.
  - Hired and trained an associate web developer to assist with website-related tasks.
  - Received 2nd place in the 2015 Canadian Community Newspaper Awards' "Best Campus Website" category.