Zhiyan Foo
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Experience

Quantcast Singapore
Software Engineering Intern *March 2017 - July 2017*

The Company: Quantcast uses big data to target advertisements at an online audience.
The Projects

- Primarily worked on RTBconf, an ETL (Extract, Transform, Load) Django App that took data from heterogeneous sources, and sorted them into an internal file format (protobuf).
- Improved performance of the sharder: a RTBconf component that split the master configuration file so that bidding engines in different geolocations only received the necessary data. Cut down CPU time from around 18 minutes to around 13 minutes.
  - Abstracted complex business logic as a graph and then implemented efficient graph traversal algorithms to perform the original business logic.
  - Used indirection to reduce memory usage and number of sorts needed to shard blacklisted and whitelisted domains.
- Worked independently to design, execute, test and benchmark main project, but collaborated with teammates, on smaller features and bug fixes.

Singapore Armed Forces Singapore
Conscript – Army *Feburary 2015 - Feburary 2017*

Education

University of Waterloo Waterloo, CA
Candidate for Bachelors of Mathematics *August 2017 – Present*

Projects

crunch-shake: A python library that evaluates scripts on the Bechdel Test and other similar metrics.
Source Code : `github.com/zhiyanfoo/crunch-shake/`.

PROGRAMMING SKILLS

Languages – **Proficient:** python (5+ years). **Familiar:** Haskell, C, Java, Racket, LaTeX.

Tech/Frameworks – Git, *Nix, Django, numpy.

Additional Coursework

Real Analysis, Convexity and Optimization Harvard Extension School

Upper-division pure math course focused on optimization problems with convex sets, normed infinite-dimensional vector spaces, and convex functionals.

Learning From Data Caltech Telecourse

Introductory Machine Learning course focused on mathematical rigor. Machine Learning algorithms built from scratch include Percepton with Stochastic Gradient Descent, hard-margin Support Vector Machines and Logistic Regression. For hard-margin SVM, an external convex optimization package was used.
Source Code : `github.com/zhiyanfoo/caltech-machine-learning/`

Algorithms on Strings Coursera, University of San Diego

String compression and search algorithms e.g. Suffix Trees, Burrows-Wheeler Transform and Knuth-Morris-Pratt.

I've been taking online college courses in addition to school or work since I was 16. It's how I started programming. Complete list of additional coursework done can be found at `zhiyanfoo.github.io/learning/`.

Extracurriculars

Haskell Club Founder (`haskelluw.com`). Captain of Intramural Futsal Team (Casual level).
Dungeons and Dragons.