Ben Zhang

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EDUCATION

University of Waterloo   Waterloo, ON
B. Math. Computer Science, Combinatorics/Optimization. GPA: 3.9+   2015 - April 2020
· Recipient of the CIBC National Scholarship, granted to one top performer in Math and CS.

EXPERIENCE

Citadel   New York, NY
Data Strategies Group, Quantitative Research Intern   September 2019 - December 2019
· (NDA) Alpha research; deploying ML/complex statistical inference models on large datasets.

Hudson River Trading   Chicago, IL / New York, NY
Core Intern   May 2019 - August 2019
· (NDA) C++, Python, SIMD/AVX. Research in efficient computing in high frequency space.

Undergraduate Research Assistant   University of Waterloo
Prof. Pascal Poupart, Sum Product Networks   September 2018 - April 2019
· Research in novel techniques for bidirectional translation using Sum Product Networks.

MemSQL   Seattle, WA
Query Optimization, Software Engineering Intern   May 2018 - August 2018

· Developed sampling optimizations for the MemSQL engine, a distributed relational database.
  Uniform sampling from rowstore tables was improved exponentially by iterating over skiplist levels.

· Designed and implemented the Automatic Histogram Generation Framework, which gathers
  histogram statistics on columns for cardinality estimation, and improves query plan choices.

Facebook   Menlo Park, CA
Applied ML, Software Engineering Intern   May 2017 - August 2017
· Caffe2 (now PyTorch 1.0) is a deep learning framework, powering all of Facebook's ad delivery.

· Implemented compile-time optimizations such as Common Subexpression Elimination, and developed
  a framework which tests optimizations at run-time, only applying them if performance improves.

· For a Hackathon, created a tool in Hack/PHP which displays activity for searches of querystrings as a
  Heatmap. Tool is adopted by Data Science teams, the only intern Hackathon project of 2017 to ship.

AWARDS

International Olympiad in Informatics, Bronze Medal   2014, 2015

International Olympiad in Linguistics, Honorable Mention   2015

Canadian Mathematics Olympiad, 11th place (2014), 14th place (2015)   2014, 2015

Traders at MIT, 8th place overall, 3rd place Options Market Making   2018

Jane Street Trading Hackathon, 1st place   2016 (SF), 2017 (UW)

PROJECTS AND ORGANIZATIONS

Waterlo Data Science Club   2017 - Present
President (Sept 2018 - April 2019), Lecturer
· Hosted weekly lectures on statistics and machine learning topics, and organized workshops for
  hundreds of members. Founded the reading group for reinforcement learning. 10x'd club membership.

MIT Battlecode   2017
2nd Place, Waterloo Omega Ruby
· Worked in a team of three to develop a AI which plays a real time strategy game over the course of a
  month. Placed 2nd over 1000+ teams, in a double knockout elimination bracket.

Waterloo ACM-ICPC   2015 - 2018
Waterloo Red (3rd team)

Canadian Computing Competition   2015 - Present
Problemsetting Committee
· Collaborating with CS professors, developed algorithmically challenging problem sets for 3000+ high
  school students in Canada. Gave presentations during the IOI selection camp to top 20 finishers.