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LIU CHEN LU

HIGHLIGHTS

Implemented sizable projects in C /C++, Python, Java, Haskell
Led project in analysis of network traffic using machine learning in corporate environment, leading to filing an intellectual property patent with Google
Ran a start-up in mobile centric software for trucking navigation and dispatching
Interests: machine learning, artificial intelligence, combinatorics and optimization, entrepreneurship, effective altruism

EDUCATION

BACHELOR OF COMPUTER SCIENCE, **UNIVERSITY OF WATERLOO** SEPT 2011 – APR 2016
3.90 GPA equivalent; Dean's Honor List

BACHELOR OF BUSINESS ADMINISTRATION, WILFRID LAURIER UNIVERSITY
3.84 GPA equivalent; Dean's Honor List SEPT 2011 – APR 2016

EXPERIENCE

LEAD SOFTWARE ENGINEER INTERN AT **GOOGLE IDEAS** APR 2015 – SEPT 2015

- Tech lead on prototyping project using machine learning clustering on network traffic to help detect DoS attacks to independent journalists protected by Project Shield
  - Used unsupervised learning to take advantage of the team's unlabeled logs
  - Experimented with various clustering algorithms and clustering parameters
  - Defined derived features and weights based on DoS SRE's feedback
  - Parallelize using recursive clustering on cluster centers
  - Used a polynomial time algorithm because dataset is small after parallelization
- Filed a patent for the ML project: a novel method for identifying anomalies in incoming network traffic to web servers for DDoS attack detection
- Implemented features, debugged, re-factored production codebase
  - Major contributor: wrote 4% of team's codebase
  - Focus on logging, data aggregation, and data visualization
  - Worked with AppEngine on Google Cloud Engine (GCE) in Python
  - Worked with Nginx, BigQuery
- Primary on-boarder and mentor to more junior intern and recruited a 20% intern

ENTREPREUR AT **LAURIER LAUNCHPAD** JAN 2015 – APR 2015

- Lead a mobile navigation startup
- Strategically interviewed customer groups and refined customer base based on receptiveness and market size
- Made MVPs and iterated based on customer feedback

SOFTWARE ENGINEER INTERN AT **GOOGLE INC** JAN 2014 – APR 2014

- Worked on production critical, cross team search features for Google Memory
- Implemented a protocol buffer sharing service between Java and C++ components
- Used Dagger dependency injection, JUnit, Stubby RPC, protocol buffers, JSLayout

MATH DEVELOPER AT **MAPLESOFT** JAN 2013 – APR 2013

- Designed and implemented the Maple Student Statistics package

UNDERGRADUATE RESEARCH ASSISTANT AT **CENTRE FOR PATTERN ANALYSIS AND MACHINE INTELLIGENCE** SEPT 2012 – JAN 2013

PERSONAL PROJECTS

- Functional evolutionary Boids simulating emergent behaviour, *Haskell*
- Context free parsing applied to the English language via the CYK algorithm, *Python*

Github: https://github.com/LiuChenLu