

# Simon Fan

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## EDUCATION

Fall 2014 -  
Winter 2019

University of Waterloo  
Bachelors of Computer Science, co-operative program  
Course topics I enjoyed a lot:  
classification, operating systems, graph algorithms,  
formal logic, financial modeling



## EXPERIENCE



**DATADOG** Data Science Intern  
time series analysis, ipython, AWS

Summer 2017  
New York City, NY

- analyzed and extracted features from time series data for causal structure learning
- developed a time series discovery tool allowing ranked similarity search over metrics
- fully replicated, using the tool, results of 10+ application performance postmortems
- studied and analyzed modern approaches to time series correlation and causality



**shopify** Software Engineering Intern - Web Platform  
rails, python, mysql, graphql, analytics.js

Fall 2016  
Ottawa, ON

- unified merchant home feed rendering flow by abstracting 100+ rails classes, reducing the number of components by 90% and improving code readability
- instrumented the merchant home feed, enabling funnel analysis on navigation patterns
- demoed a prototype shopping bot classifier, which led to a new full time project



**Investments** Programmer Analyst Intern - Shareholder Systems  
java, sybase, d3.js, flot.js, jquery

Winter 2016  
Toronto, ON

- developed an application to visualize KPIs for the fund marketing team
- architected the database model and implemented its corresponding ETL pipeline
- designed and implemented a user friendly query interface supporting all T-SQL joins
- extended 15+ flot.js features to incorporate d3.js features for more powerful interactivity



**MetricWire** Software Engineering Intern  
mongodb, express, angular.js, node.js

Summer 2015  
Waterloo, ON

- reduced web application's local storage space usage by 95%, and overhead by 80%
- won the internal demo day by owning the development of the rewards program
- redesigned and built a new researcher portal interface, while refactoring frontend code



## INITIATIVES



SAE AutoDrive Challenge - WATonomous  
Perception Team

Fall 2017 - present

- researching and prototyping CNNs for traffic sign classification
- studying implementations of deep learning models on Intel FPGAs



Ace Consulting Group  
Associate

Fall 2014 - Summer 2015

- prepared and presented research deliverables to portfolio clients
- organized various networking events connecting startups to ventures



Tech Retreat

Winter 2014 - Summer 2016

Founding Organizer

- organized Canada's first annual highschool learnathon and hackathon
- coordinated logistics and sponsorships for 200 students



## HIGHLIGHTS

python	jquery	numpy
c	rails	keras
c++	SQL	pandas
java	AWS	matplotlib



## PROJECTS

**gestur** (Sign Language Classification)

flask, video processing

interaction platform; classify sign language gestures in order to provide automated assistance to people with disabilities

SpartaHack: Best Use of IBM Bluemix,

Best Use of Open Source, 3rd place overall

**OpenSpace**: Cassini module

OpenSpace, NASA SPICE, lua

space visualization platform; recreated the Cassini mission by parsing NASA SPICE data and integrating it into OpenSpace

The simulation was projected onto the Hayden Planetarium's dome

**watchr** (Crisis Management)

node.js, android, socket.io

crowdsourced safety platform; log suspicious sound levels using civilians' phones, in order to trace sound origin and send location personalized evacuation routes

HackPrinceton: Most Impactful app

**Exploring Food Embeddings using SS-Voc Learning**

keras, word2vec models

publication; applications of semi-supervised vocabulary-informed (SS-Voc) image classification models to a subset of word2vec and corresponding images, outperforming non-Voc methods' precision by ~10%

**TechTanks** (AI Game)

rails, redis, paper.js

educational game; built an online arena which allows players to code tank AI and battle samples or other submissions

more on 