

# Charlie Lin

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## SKILLS

Machine Learning  
Web Development  
Data Science & Analytics  
Algorithms & Data Structures  
Object-Oriented Programming  
Financial Modelling  
Public Speaking

## TECHNOLOGIES

### LANGUAGES

Java • Python • C++ • C#  
SQL • Matlab • Solidity

### FULL STACK

JavaScript • NodeJS • React  
Angular • Mongo • AWS • .NET  
Flask • HTML5 • CSS3 • jQuery

### MACHINE LEARNING

Tensorflow • Scikit-Learn • Keras  
Jupyter Notebook • Pandas • D3

### SYSTEMS

OSX • Linux • PC • Git • Bash

## AWARDS

Top 10 Worldwide TechCrunch Disrupt  
1<sup>st</sup>/1000 Hack the North (Finalist)  
1<sup>st</sup>/400 Hack NYU (Startup)  
1<sup>st</sup>/130 Waterloo EngHack (ML)  
1<sup>st</sup>/130 Shopify Case Competition  
Finalist /55 Airbnb Consulting Comp

## EDUCATION

**WESTERN UNIVERSITY & IVEY BUSINESS SCHOOL**  
BESc - Software Engineering  
HBA - Business Administration  
April 2021 | London, ON

## COURSEWORK

Algorithms (UC San Diego)  
Machine Learning (Stanford)  
Deep Learning (Google)  
Intermediate C++ (Microsoft)

## ACTIVITIES

Private Pilot License Candidate  
Provincial Soccer Referee & Mentor  
RHHS Varsity Soccer Captain  
Canadian National Lifeguard  
RCM Level 8 Pianist

## EXPERIENCE

### FIRMWATER INC | Full Stack Software Developer

May 2018 – August 2018 | Toronto, ON

- Crafted a **React.js** & **RESTful** API system using **ES8** modular programming to automate client processing which cut monthly accounting time by 32%
- Deployed custom Youtube player in a **.NET MVC** LMS (e-learning platform) with **SQL** stored procedures & **Node.js** wrapper for user progress tracking

### WESTERN UNIVERSITY | Machine Learning Researcher

June 2018 – Present | London, ON

- Working under Prof. J Yang to perform **topology optimization** on hyperbolic acoustic metamaterials using a pixel-wise **image segmentation** method
- Implemented a **convolutional neural net** in **Tensorflow** & **Keras** that correctly optimized macroscopic quantum wave propagation with > 99% accuracy

### EMPLOYO.IO | Co-Founder, Lead Engineer

February 2018 – Present | Toronto, ON

- Launched a **MEAN stack** intern exclusive job board with an INSEAD mentor
- Engineered **rule-based elasticsearch** algorithm to save HR 90 minutes / hire
- Guided developer team to create a **Word2vec** job recommendation engine

### NORTH SOUTH MANAGEMENT | Business Data Analyst

January 2018 – April 2018 | Toronto, ON

- Performed strategy pitches for TSXV: BEER to bolster upcoming IPO value
- Reduced retail predictive model error by 40% with **PCA** & **ridge regression**
- Advised niche wine production (8% CAGR) via **sklearn feature engineering**
- Clustered 5000 product reviews with **tf-idf** & **k means** to drive sales strategy

## PROJECTS

### OURBLOCK 🌀 | Python / AWS / Solidity / D3

- Pitched serverless community safety solution at **Disrupt SF18** to thousands
- Trained **support vector machine** to classify & rank crime with 97% accuracy
- Applied **AWS Lambda**, **Ethereum**, & **Google Maps** for real time data sharing

### PHORMATICS 🌀 | Jupyter Notebook / Flask

- Computer vision gym trainer using **pose estimation** to critique workout form
- Designed custom **cloud computing** flask architecture with **WebRTC** stream

### BATTLE TETROMINO 🌀 | Java

- Applied low-latency websockets to a multiplayer Tetris game & chat room
- AI trained with a **genetic algorithm** using supervised heuristic optimization

## LEADERSHIP

### FOUNDERS NETWORK | VP Education

Since Sept 2017

- Hosting workshops & writing curriculum on machine learning and other CS topics for hundreds of students as part of the largest tech club on campus
- Acquired \$11K from IBM / CIBC for Canada's largest tech case competition
- Authored case study by testing viability of IBM Watson using the **Java SDK**

### COMMUNITECH | Campus Ambassador

Since May 2018

- Directing the largest Canadian tech accelerator's Code to Win competition