

# Lucas Harvey

Computer Science, University of Waterloo

LucasHarvey 

lucasharvey.com 

lucas-harvey 

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## SKILLS

**Programming Languages:** Python, SQL, C++, JavaScript, PHP, HTML, CSS, C, Objective-C

**Tools and Frameworks:** Pandas, Scikit-Learn, RabbitMQ, Flask, Airflow, Hive, Docker, Git, React, React Native, XCode

## WORK EXPERIENCE

### Software Engineer Intern - Trade Machine Learning | Bloomberg

Sept - Dec 2020 | NYC, NY

- Responsible for the end-to-end development of a **Recommender System** for post-trade processing automation rules
- Leveraged **Hierarchical Clustering** to find patterns in user trading data and to consolidate user behaviour into recommendations
- Implemented **back-testing**, yielding **over 95% recommendation accuracy** and automating **over half of total trade volume**
- Devised conflict-resolution heuristic and integrated Recommender System into existing service infrastructure

### Software Engineer Intern - Machine Learning Platforms | Wayfair LLC

Jan - Apr 2020 | Boston, MA

- Increased machine learning training speed by **10x** through the creation of a big data ETL pipeline using Airflow and Hadoop
- Spearheaded development of microservice for the creation and discovery of ML models, datasets and features
- Reduced multiple file upload memory usage by **100%** through streaming with Python's Requests Toolbelt
- Revamped model and dataset downloads through compression and routing for increased speed and file collision handling

### Full Stack Developer Intern - Playfitt App | Intellisports

May - Aug 2019 | Montreal, QC

- Led the development of a leveling up system to incentivize long-term user engagement through gamification
- Decreased leaderboard load time by **5x** through SQL optimizations such as indexing predicates and selecting essential fields
- Implemented infinite scrolling for dynamic data to ensure scalability of leaderboard feature with growth of userbase

## PROJECTS

### StockTrend | *Python, Scikit-Learn, Pandas*

- Collected fundamental data about companies (P/E ratio, D/E ratio, etc.) and used machine learning to predict whether a company will outperform or underperform the S&P 500
- Created parser for Yahoo finance data, back-testing engine and supervised learning model which consistently outperformed the market by **5% over a 4 year period**

### PartyFinder | *JavaScript, React Native, Expo, Firebase*

- Built crowdsourced mobile app for iOS and Android to help students find events happening near them with live ratings
- Amassed **over 7,000 downloads** and **1000 Weekly Active Users** entirely with organic user acquisition
- Utilized the Google Places API to propose relevant address suggestions and locate events on a map

### VisionLock | *Python, OpenCV, Dlib, Raspberry Pi*

- Developed home security system capable of unlocking a door and greeting the resident by name with text to speech conversion
- Leveraged OpenCV, Dlib and Haar Cascades to perform facial recognition efficiently onboard a Raspberry Pi

## EDUCATION

### University of Waterloo | Candidate for Bachelor's of Computer Science

2018 - Present | Waterloo, ON

91.07% Cumulative Average

Dean's Honours List Recipient (4x)

Babbin Family Entrepreneur Scholarship

Relevant Coursework: Machine Learning, Combinatorics, Probability, Statistics, Software Engineering Principles, Data Structures