Timothy Zheng

Computer Science and Finance

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EDUCATION

University of Waterloo   2021 - Present

Candidate for Bachelor of Computing and Financial Management   *Waterloo, ON*
- Dean's List.
- Relevant Coursework: Financial Data Analysis, Functional Programming, Algorithm Design & Data Abstraction.
- Clubs and Activities: UW Badminton Club Executive, UW Formula Motorsports Business Section.

SKILLS SUMMARY

Languages: Python, JavaScript, HTML/CSS, SQL, Markdown, LaTeX.
Technical Skills: CI/CD, Web Scraping, SSH/Linux Shell, Microsoft Office Suite (Excel, Word, Outlook).
Libraries: Pandas, Matplotlib, yFinance, Flask, React, Bootstrap, BeautifulSoup4, Google Cloud Platform.
Tools/Applications: Azure Static Web Apps, Heroku, Git, VS Code, Jupyter Notebook, PuTTY, Ubuntu, GNU Bash.

WORK EXPERIENCE

IMOxKids2AI   Jun – Oct 2021

Python Instructor   *Remote*
- Instructed a class of six students from Dublin, Ireland virtually using Zoom, teaching intermediate programming concepts (**functions, data structures, recursion, search and sorting algorithms**) over a **five month** term.
- Engaged with students and parents with weekly personalized progress reports and presented live visualizations of sort and search algorithms using playing cards, resulting in an end-of-term class average of **94.6%**.

COMMUNITY & LEADERSHIP

Director of Operations   Oct 2020 – Jun 2021

St. Robert Coding Club   *Thornhill, ON*
- Directed, instructed and managed a **150-member** club of high school students interested in coding.
- Prepared students for the CEMC Canadian Computing Competition in the Junior and Senior stages.

PROJECTS

Smart Stock Portfolio Generator | *Jupyter Notebook, Pandas, Matplotlib, NumPy, yFinance*   Oct – Dec 2021
- Led the creation of a dynamic finance program in **Python** with 2 classmates that quantitatively analyzed live financial data to produce the most volatile portfolio from an arbitrary list of stock tickers.
- Calculated beta coefficients, standard deviation, Sharpe ratio, and stock option interest ratios using **Pandas** and **NumPy** to rank stocks and used **Monte Carlo** methods to determine optimal portfolio weight combinations.
- Optimized code execution by threading and caching API calls to our financial data source, yielding a **20x decrease** in run time and achieving the highest class grade of **97.5%** and 2nd place in a real-world simulation competition.

DiscardApp | *JavaScript, HTML, Google Firebase, BeautifulSoup4, Google Places API, Azure CI/CD*   Jun 2021
- AtlasHacks II First Place Winner, byteKode Summer 2021 Runner-up.
- Created a web application in a team of 4 to display the best credit card to use in your wallet, stored on **Google Firebase**, by determining where you are shopping using **Google Places** categories, **web-scraped** Rakuten referral links using **BeautifulSoup4** and a curated Canadian credit card list attracting **800 unique visitors/mo**.

CheckinWithMe | *Python, Natural Language Processing, AstraDB, Discord.py, Heroku CI/CD*   May 2021
- Mental Health Hacks Hackathon Winner: Best use of Linode Cloud, Best Domain Name from Domain.com.
- Led a team of 4 to create and deploy a Discord bot in Python with **Heroku** that uses **tone/sentiment analysis** to detect and respond to users' moods, generating weekly personalized mood reports using data stored on **AstraDB** leading to an increased awareness about their mental health.

RobCoin | *Python, Flask, OpenSSL*   Apr 2021 – Jun 2021
- Co-created original Python code and instructional material for a **proof of work cryptocurrency** networked with Flask and OpenSSL from scratch.
- Tailored original instructional material alongside code development to educate Coding Club members in **blockchain, public/private-key cryptography, hash functions** and **distributed computing**.