SAMUEL SHI

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EDUCATION

University of Waterloo — Waterloo, ON
Candidate for Bachelor of Computer Science, Honours Computer Science — *Sep 2022 – Present*

- President's Scholarship of Distinction Recipient
- Cumulative GPA: 85%

TECHNICAL SKILLS

Languages: Python, C/C++, Java, LaTeX
Developer Tools: Windows, Linux, SSH, Bash, Git, Vim
Platforms: Azure Databricks, Jira, Confluence, Microsoft Power Platform, Jupyter Notebook

EXPERIENCE

Platform Analyst Co-op — Jan 2024 – Present
Manulife — *Toronto, ON*

- Supported the Head of Platform Services Management and the leadership staff, creating reports, Power BI dashboards, and assisted in analyzing cost data.
- Created Python notebooks to automate querying user table permissions metadata on Azure Databricks. Optimized the code with multiprocessing techniques to speed up runtime by **100x**. Greatly assisted auditing by saving weeks worth of manual work.
- Actively monitored **five** Jira projects and commumicated with team directs through scheduled meetings, promptly following up on platform issues and maintenance requests.

Machine Learning Research Intern — May 2023 – Aug 2023
University of Toronto — *Toronto, ON*

- Conducted research on interpretable AI optimization and their possibilities of enhancing predictive accuracy for extrapolation tasks.
- Mentored a fellow undergraduate student, imparting foundational knowledge in data science, machine learning, and proficient Python programming techniques.
- Developed and implemented custom utility functions, enabling the generation of insightful data visualizations, including parity plots and contour plots, to visualize model performance across hyperparameter space.

RESEARCH

Interpretable Linear Ensemble Model | *Python, scikit-learn*

- Prototyped custom machine learning models that integrate decision trees with linear models under the supervision of Prof. Jason Hattrick-Simpers at the Department of Materials Science and Engineering, University of Toronto.
- Co-authored in the paper: "Artificial Intelligence-Enabled Optimization of Battery-Grade Lithium Carbonate Production"

PROJECTS

Course Selection Bot | *Python, BeautifulSoup 4, discord.py*

- Developed a Discord bot in Python to assist students in getting into their desired courses when enrollment is full.
- Implemented web scraping with bs4 to pull HTML table data from the uWaterloo course catalogue based on user selected course codes.
- Parses web data automatically and notifies users in real time through async function calls when an opening is detected.

Chess | *C++, X11*

- Incorporated the Model-View-Control design pattern to effectively achieve low coupling and high cohesion.
- Utilized the observer design pattern along with the X11 library to handle drawing grahpics to a display window.
- Thoroughly implemented the official chess rules, covering critical aspects such as castling and en passant.
- Developed **four** levels of computer players with each successive one increasing in difficulty.