Shawn Liu

778-939-2233 | s655liu@uwaterloo.ca | linkedin.com/in/shawn-liu-399448170/ | github.com/s655liu

Technical Skills

Languages: C, C++, C#, Python, JavaScript, SQL, Java, HTML & CSS, React, R, Bash
Developer Tools: Git, Linux, Jira, Microsoft SQL Server, Valgrind, DB2
Design Models: ASP.NET, MVC, OOP, UML
Libraries: Pandas, NumPy, Jupyter, MatLab, scikit-learn, PyTorch

Work Experiences

Software Engineering Intern Sept. 2024 – Dec. 2024 (expected)
Bosda Inc. *Aurora, ON*

- Constructed 20+ interfaces in **C# ASP.Net** for company databases, allowing company data to be manipulated through interfaces instead of direct access to the database.
- Applied **Sequential, LSTM, Dense** and **TimeseriesGenerator** models and for predicting the sales and price of company product.
- Implemented robust **APIs** to integrate machine learning functionalities in Python into company codebase, which allowed company's codebase to develop enhanced data processing and automation capabilities.

Data Automation Engineer June 2024 – Aug. 2024
Wuxi Apptec *Philadelphia PA, USA*

- Designed and implemented database framework and architecture for company's customer data in Microsoft Fabric and SQL.
- Optimized Python scripts for data processing, improving the efficiency of company source code by **20%**.

Full-Stack Developer Sept 2023 – Dec. 2023
SparkLease Inc. *North York, ON*

- Designed and implemented recommendation algorithm for product listing, improving user click-through rate of products by **10%**.
- Constructed 4 Websites using **ASP.Net** with **MVC** structure to display various user data for admin purposes.
- Created WebJobs in **C#** on the **Microsoft Azure Portal** that automates the programs to calculate and classify user data for developing recommendation algorithm.
- Designed and organized data in **Microsoft SQL Server** to keep track of user information and statistics for application functionalities.
- Resolved **20+** bugs across multiple web applications, including implementing new custom features, optimizing back-end query logic, and implementing front-end and back-end connections.

Network Automation Software Developer Jan. 2023 – April 2023
Nokia *Ottawa, ON*

- Implemented **FastAPI** to the source code of CNDO services with **SQLAlchemy**, allowing the network service to access databases more efficiently.
- Created an interface for the server in **React** that allows users to send product preferences to database.
- Wrote **Python** scripts to automate the backup of configuration files from network devices using SSH and SCP.
- Automated tests using **Pytest** that checked the functionalities of the interface.

Data Scientist Intern Aug. 2021 – Dec 2021
IQVIA *Toronto, ON*

- Collected data using web Scrappers and **Python** algorithms to assemble samples and test cases used by IQVIA's HCP Targeting software.
- Organized data with **Pandas** and **NumPy** to track and ensure accuracy of physician information.
- Implemented algorithms using **C++** to distinguish different strings of hospital and physician names for IQVIA's HCP and HCO mapping tests, increasing efficiency by **15%**.

Education

University of Waterloo Sep. 2020 – May 2025 (Expected)

- **Degree**: Bachelor of Honours Computer Science. Minors in Combinatorics and Optimaization + Computation Mathematics.
- **Relevant Courses**: OOP, Data Structures, Algorithms, Operating Systems, User Interfaces, Human Computer Interaction, Machine Learning, Artificial Intelligence, Applied Cryptography, Databases
- **Awards**: Term Distinction 1A, University of Waterloo President's Scholarship

Projects

WLP4 | *C++* Mar. 2022 – April. 2022

- Developed a compiler for University of Waterloo's WLP4 programming language, a variation of C.
- Consists of a scanner, parser, context sensitive analyzer, and code generator in C++.
- Implemented algorithms such as simplified maximum munch, LR(1), bottom-up parsing, and parse tree traversals.

Straights | *C++* Nov. 2021 – Dec. 2021

- Developed a four-player card game of Straights, implemented with **OOP** and **polymorphism**.
- Ensured low coupling and high cohesion in the program