Jessie Cao

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Education

University of Waterloo   Waterloo, ON
Bachelor of Honours in Computer Science, Specialization in Artificial Intelligence   *Sep. 2023 – Apr. 2028*
GPA: 3.9

Technical Skills

Languages: Python, C/C++, Java, JavaScript, SQL, PHP, HTML/CSS, Blade, R, Racket
Frameworks& Libraries: React, Flask, Vue.js, FastAPI, BeautifulSoup, Selenium, pandas, Node.js, Laravel, Inertia.js, Bootstrap, Matplotlib, OpenCV
Developer Tools: Git, Bash, Linux/Unix, CentOS, Apache, Android Studio, SQLite

Experience

Full-Stack Developer   May 2025 – Aug. 2025
Royal Bank of Canada   *Toronto, ON*

- Facilitated implementation of **Redis**-based caching mechanisms in the backend (Python), optimizing data retrieval and leveraging scalability
- Migrated backend testing framework from **Behave** to **Pytest**, introducing a mock **SQLite** database to validate SQL queries efficiently, modernizing the test suite to improve maintainability
- Implemented a **Vue.js** feedback page and migrated help widgets to dedicated support pages in the frontend of the portfolio analytics website, improving usability for advisors
- Contributed to the development of SQL-based **ETL pipelines** with **ClickHouse**, aggregating and transforming client data into business-ready tables to support internal analytics

Full-Stack Developer   Sep. 2024 – Dec. 2024
Bosda International Inc.   *Aurora, ON*

- Developed an admin panel with **PHP Laravel** and **JavaScript**, enabling abstraction of **CRUD** operations with internal **MySQL** database
- Implemented a **React-Flask** application to enable automated products' assignments to warehouses by integrating with Shipstation's **REST API**, reducing processing time by **96.67%**.
- Automated the retrieval of product information from online vendors using **Python** with **BeautifulSoup** and **Selenium**, developing web scrapers adapting to different vendors' websites and collecting data for over **10,000** products
- Designed and managed **SQL** schema and tables inside the internal database to streamline access and storage of information on customers and product components

Projects

Period Tracker | *Java, SQLite*

- Developed a full-stack JAR application software, leveraging an interactive calendar, graph and table displaying both inputted and predicted menstruation stages
- Established connections between Java and SQLite by loading the JDBC driver, facilitating the execution of SQL queries and handling of Result Sets
- Constructed an SQLite .db file storing user-specific information, managed through retrieving and calculating from user input via GUI

Sorcery Card Game | *C++*

- Developed a command-line turn-based card game simulation using a Model-View-Controller architecture
- Utilized Observer and Decorator design patterns to manage game state and extend minion capabilities
- Coordinated with team members using Git for version control, managing branches, merging changes, and resolving conflicts to ensure a smooth workflow and clean codebase.

Compiler Construction for a C-like Subset Language | *C++*

- Designed and implemented a top-down parsing compiler to recursively build a parse tree from a context-free grammar, enabling semantic analysis and code generation
- Engineered a stack-based symbol table hierarchy, managing scoped variables and function signatures and enabling robust type checking and memory offset calculation