Rui Jie LI . Jarvis Consulting

I am looking for an opportunity as a full-stack developer. I have a bachelor's degree in software engineering from Polytechnique Montreal and about a year of work experience in software development, both in backend and frontend development. I am proactive, and I enjoy solving problems and building stuff. I am familiar with C++ (one project on embedded programming, one class on Linux OS, and OOP & design patterns), Python (performance optimization), JavaScript (frontend development), CSS (responsive design), and TypeScript (Angular for frontend, Node.js for backend) from academic and work experience.

Skills

Proficient: Python, C++, HTML, JavaScript, TypeScript, Angular, CSS, Git

Competent: Linux/Bash, RDBMS/SQL, Agile/Scrum, Java, C, Docker

Familiar: Android, AWS, Machine learning, Linux OS, Unit testing, Kotlin, Message queue, Makefile, Boost.Python, VBA

Jarvis Projects

Project source code: https://github.com/jarviscanada/jarvis_data_eng_RuijieLi

Linux Cluster Resource Monitoring App [GitHub]: Made an app written in Linux Bash/Shell that monitors the resource usage of CentOS virtual machines on Google Cloud. The scripts are triggered by crontab and send the information to a Postgresql database that runs in a Docker container.

Highlighted Projects

Embedded programming [GitHub]: Wrote a C++ program that allows a robot to complete an obstacle course. Aside from some features that everyone had to do as part of the class (e.g. buttons and debouncing), I mostly worked on the following features: measuring distance with sonars (due to COVID, it was done in Simulink instead of actual sonars), controlling the LEDs, and CTC.

Browser drawing app: Made a drawing app similar to Microsoft Paint in Angular TypeScript. The features I worked on are: straight lines (with points between segments), aerosol, bucket fill (left click to color all connected pixels with similar color, right click to color all pixels with similar color), polygons (number of edges adjustable), part of free from selection, parts of undo/redo, and unit testing.

Cross-platform collaborative drawing app: Made a chatting feature on Android that allows users to send messages in different channels (some groups are public, others are only for people drawing on the same picture). The Android app was written in Kotlin and the Firebase was used as a database.

UI for a transit simulator: Worked on the user interface (written in TypeScript / Angular) for a transit simulator made by the client (written in Python). I worked on deployment and package diagrams and the following features: displaying the events generated by the backend while a simulation is running, connecting the frontend and the backend with a message queue (ActiveMQ running in Docker), and pause/continue/stop simulation.

PolyStar computer vision team: Worked on a robotics project where the goal was to shoot the other team's robots. I wrote a program to split 1920x1080 images into 1080x720 images based on XML data, annotated 200 pictures for the machine learning algorithm, and wrote a program to detect the color of an LED in a picture (return gray if it is off, return red or blue if it is on).

Professional Experiences

Software Developer, Jarvis (2024-present): So far, made an app written in Linux Bash that monitors the resource usage of virtual machines on Google Cloud. The Bash scripts are triggered by crontab and send the data to a Postgresql database that runs in Docker.

Data Analyst (contract part time), Ethos Metrics (2024-present): Migrating data from various formats (mainly Excel and Word) to Salesforce. Most of the code is written in Python in Google Colab. Data extraction is done using either Excel or regular expressions.

Data Analyst, Fondation de Polytechnique (2023-2024): Made some Python scripts to accelerate data entry tasks, implemented responsive design for multiple web pages (about 20 pages based on 3 templates), fixed some bugs related to scrolling and display (page scrolling to top when continue/back is clicked, unable to complete transaction when switching from portrait to landscape on mobile), added some CSS animations/transitions, made a donation tax credit estimation tool for the 2024 fundraising campaign (ex. https://soutien.polymtl.ca/ce/don-unique), and made text & video documentation on how to edit the web pages.

Data management assistant, Fondation de Polytechnique (2021-2023): Made a telemarketing tool in Excel VBA (used for a few months), partially automated some data entry tasks, processed a few thousand call center logs (Python regex was used to make it faster), and worked a bit on some web pages.

Backend development intern, Polytechnique Montreal (2019): Made a telecommunication simulator written in Python run up to 65% faster (~1300 seconds to less than 500 seconds in one particular configuration) and use up to 50% less memory (~12-15GB less in one case) by implementing multiprocessing, removing certain function calls and @property, using the **slots** attribute, avoiding calling scipy.rvs() in a loop, and avoiding copying large amounts of data between processes. Further attemps to optimize it with shared memory (BaseManager) and Boost.Python (translating part of the code to C++) were unsuccessful due to high overhead.

Education

Polytechnique Montreal (2018-2023), Bachelor of Engineering, Software Engineering - GPA: 3.26/4.0

Miscellaneous

- Badminton and basketball