Shi Qi

✉ s28qi@uwaterloo.ca | 🏠 shiqui.me | shiqui | in shiqui

Skills

Languages	Python, Java, TypeScript, JavaScript, C++, C#, R
Frontend / Backend	React, Next, Astro, Solid, Express, FastAPI, Django, Tailwind
Database	SQLite, PostgreSQL, PocketBase, MongoDB, Drizzle, Prisma
Test / CI	PyTest, Pandera, Docker, GitHub Actions
Deep Learning	PyTorch, sklearn, HuggingFace, OpenCV
Embedded System	ARM Assembly, STM32, Arduino, Raspberry Pi, VHDL

Work Experience

Burkett Statistical Consulting
Remote - Ottawa, ON

SOFTWARE DEVELOPER
May. 2024 - Aug. 2024

- Applied **Simulated Annealing Search** to perform schedule optimization, where a discrete space of permutated schedules is searched. Improved the metrics by approximately **20%**, by reducing search space, improving neighbor selection, and tuning cost function.
- Built an automated **CI** pipeline that benchmarks the performance of the optimizer algorithm using **GitHub Actions**.
- Developed machine learning models in **R** in forecasting and classification tasks, achieving positive skill scores in comparison to the baseline model.

Friendlier
Guelph, ON

AUTOMATION ENGINEER
Sep. 2023 - Dec. 2023

- Fully designed an intake processing conveyor solution that automates scanning and sorting of various types of containers, using a **Raspberry Pi**, a barcode scanner, servo motors and conveyor belts.
- Independently implemented a functional iteration of the design, replacing the original manual sorting process and increasing the throughput from **300** units per hour to **750** units per hour.
- Developed a concurrent model in **Python** to handle IO, scheduler and data fetching in parallel, applying the producer-consumer pattern to communicate between threads.
- Automate operation logging and data collection, and designed a pipeline to generate reports and visualizations, using **Google Scripts.**

Data2Discovery
Remote - Bloomington, US

SOFTWARE DEVELOPER
Feb. 2023 - May. 2023

- Maintained and developed a data visualization dashboard using the **Dash** library.
- Patched design flaws, leveraged proper usage of the **Dash** library, and eliminated linearly increasing request time.
- Researched the **Transformer** model, and hosted workshops discussing its internal workings and limitations.

Projects

Chirp 🔗

TYPESCRIPT, REACT, NEXT, DRIZZLE, POSTGRESQL, NEXTAUTH
2024

- Developed an emoji only social media platform using **Next**.
- Leveraged **server action** as a type-safe data layer to interact with the **PostgreSQL** database, using **Drizzle** as the ORM.
- Integrated **NextAuth** for user authentication and authorization through OAuth.

SimpleTeleport 🔗

JAVA, SPIGOT, SQLITE, MAVEN
2023

- Developed a **Spigot plugin** for Minecraft 1.20, managing home, warp and player teleports without compromising the vanilla experience.
- Maintain a **SQLite** database through **JDBC** to handle data storage.
- Added custom teleport animation with sound effects, potion effects, particle effects and an animated bossbar.
- Published on SpigotMC, with over 100 downloads.

Check out my site for more 🔗

Education

University of Waterloo
Waterloo, ON, Canada

COMPUTER ENGINEERING, UNDERGRADUATE
2022 - present

President's Scholarship - $2000