Shi Qi

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Skills

Languages	Python, C++, C#, Java, JavaScript, TypeScript
Deep Learning	PyTorch, sklearn, HuggingFace
Web	HTML, CSS, React, Django, Plotly, Dash, Express, TRPC, Next
Embedded System	STM32, Arduino, Raspberry Pi, VHDL
Database	SQL, Prisma, JDBC, SQLite

Work Experience

Friendlier
Guelph, ON

Automation — *Sep. 2023 - Dec. 2023*

- Designed and implemented an automated solution that scans and sorts various types of containers, using a Raspberry Pi, a barcode scanner, servo motors and conveyor belts.
- Developped a concurrent model to handle IO, scheduler and data fetching in parallel.
- Automate operation logging and data collection, and designed a pipeline to generate reports and visualizations, using Google Scripts.

Data2Discovery
Remote - Bloomington, US

Software Developper — *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 on the Transformer model, and hosted workshops discussing its internal workings and limitations.
- Lead projects among three data science graduate teams, contributed to decision making and organized regular internal communications.

Projects

SimpleTeleport
Java, Spigot, SQLite, Maven — *2023*

- Developed a Spigot plugin for Minecraft 1.20, managing home, warp and player teleports while keeping the experience as vanilla as possible.
- Implemented a SQLite database through JDBC to handle data storage.
- Added custom teleport animation with sound effects, potion effects, particle effects and animated bossbar.
- Published on SpigotMC, with currently 73 downloads after a month of release.

PoetryGPT
Python, PyTorch — *2023*

- Built a decoder only transformer model in PyTorch that generates Chinese Poems.
- Trained the model on a dataset of 10000 poems, using a character level tokenizer.

Reinforcement Learning in 2D Shooter
Python, Pygame, PyTorch — *2022*

- Created a 2D top-down arena shooter game in PyGame with custom sprites and collision logics.
- Worked as a team to implemented Q learning with PyTorch and trained an AI that shoots moving targets in the game.

Star Formation Simulation: Astro Award Winner
Mcgill Physics Hackathon

Python, Pygame — *2022*

- Created a simulation of planetary motion in PyGame, demonstrating gravitational pulls between stars and the formation of larger bodies.
- Calculated the trajectories using Euler's method, based on physics simulated using Newton's Laws.
- Winner of Astro Award over 100+ participants in the McGill Physics Hackathon.

SVI Scheduler
MariHacks 2.0 - Hackathon

Python, TypeScript — *2021*

- Developed a Google Sheet plugin that automatically balances work load across different workers based on their availabilities, using greedy algorithm and priority queue.

Education

University of Waterloo
Waterloo, ON, Canada

Computer Engineering, Undergraduate — *2022 - present*

President's Scholarship - $2000