Daniel Qu

Software Developer

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Skills

Languages Javascript, Python, C, C++, Bash, SQL, HTML, CSS, Rust
Frameworks React, React Native, Redux, Express, Flutter
Tools Git, Unix Command Line, Jenkins, REST API

Work Experience

Playstation - Sony Interactive Entertainment
Jan. 2022 - Present

Front End Software Developer

- Improved working efficiency for QA engineers by developing a Python script to track history of over 2000 automated test cases.
- Supported development of Playstation checkout system by investigating/fixing React Native bugs and automating end-to-end tests.

Midnight Sun - University of Waterloo
Nov. 2021 - Present

Firmware Developer

- Migrated build system from GNU Make to Python Scons, improving extensibility of linting, formatting, and project setup.
- Ensured continuous voltage during pedal board operation of solar car by writing unit tests in C.

Dreamschools
May. 2021 - Aug. 2021

Full Stack Software Developer

- Overhauled checkout system by redesigning React UI, supporting more payment methods, and migrating from deprecated API's.
- Improved order history API response time by 10x by parallelizing requests in Express and leveraging Stripe API features.
- Designed and implemented complete and flexible notification system with the help of GetStream API.
- Developed an email/SMS communication system between organizations and students using Twilio and PostgreSQL.
- Took initiative to improve code quality by extracting reusable components and reorganizing file structure.

Projects

Midnight Sun Driver Dashboard
Apr. - Sep. 2021

Flutter, Dart, Python

- Built digital dashboard for Midnight Sun's solar vehicle, including speedometer, state of charge, target speed, and more.
- Performed CAN integration testing using mock CAN messages and Python driver code.
- Effectively used Flutter animations to direct driver attention when appropriate.

Waterloo Engineering Competition 2020 - Programming Division
Nov. 2020

Python

- Programmed and simulated internal logic for robots to efficiently clean variable-sized floors.
- Minimized fuel usage by choosing optimal starting robot starting locations and greedy pathfinding.
- Clearly communicated team's algorithmic decisions and solutions using appropriate visuals to a panel of judges.

Solving SuperGhost
Oct. 2020

ExpressJS, Socket.io, PostgreSQL, Python

- Solved word game 'SuperGhost' algorithmically by constructing 400,000-node directed graph.
- Created a prototype for real-time multiplayer SuperGhost using Javascript and Socket.io.
- Developed a backend server and database to support shareable game codes and game rooms.

Education

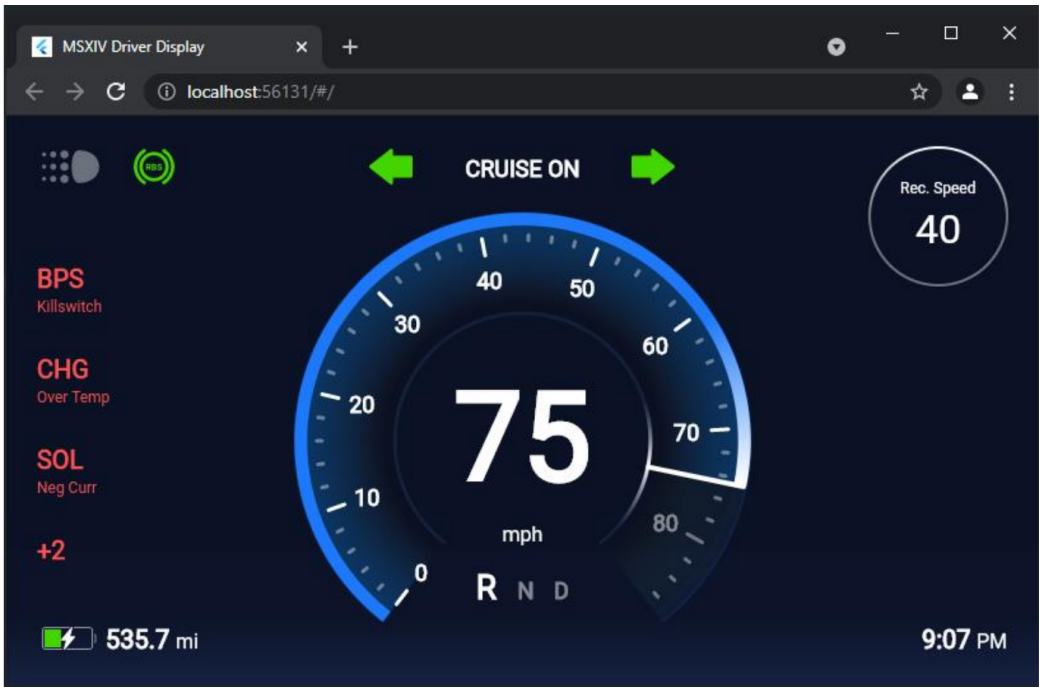
University of Waterloo - 92% GPA
Sep. 2020 - May. 2025 (Expected)

B.A.Sc. in Honours Mechatronics Engineering
Waterloo, Canada

Extra: Project Demos

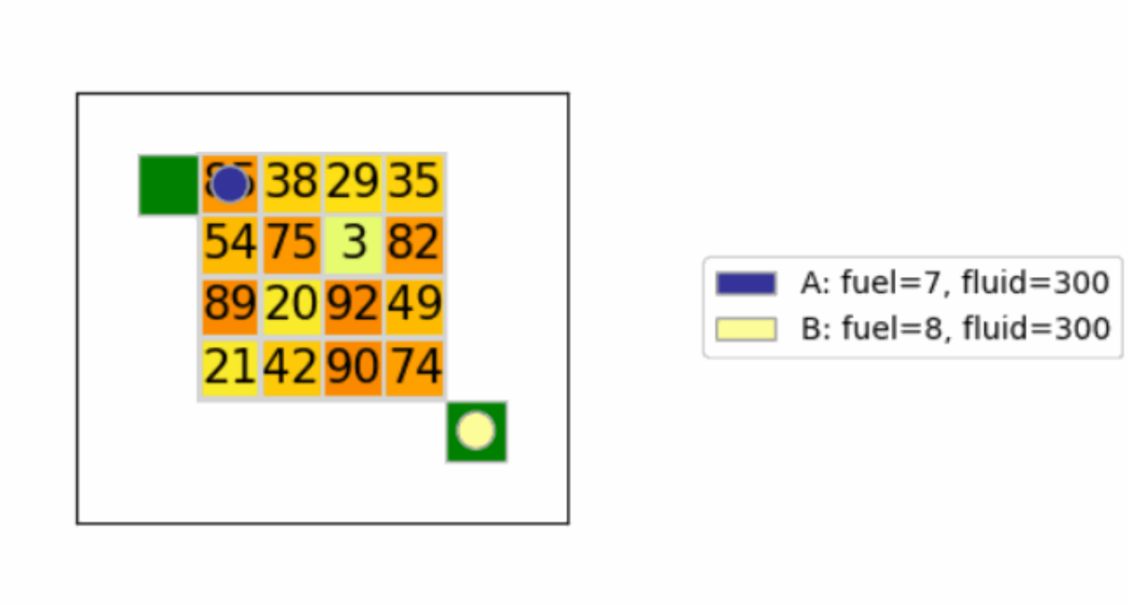
Visit https://tinyurl.com/daniel-qu-portfolio for short video demonstrations.

Midnight Sun Driver Dashboard



- Display used as dashboard for Midnight Sun's Solar Car.
- Shows a subtle animation to alert driver when recommended speed changes.
- Used gradients effectively to meet specifications.

Waterloo Engineering Competition 2020 - Cleaning Robot Task



- Carefully considered and developed algorithm to choose robot starting locations (green tiles).
- Maximized competition score by maximizing tiles cleaned, minimizing fuel, fluid, and number of robots used.