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 - Present

B.A.SC. IN HONOURS MECHATRONICS ENGINEERING

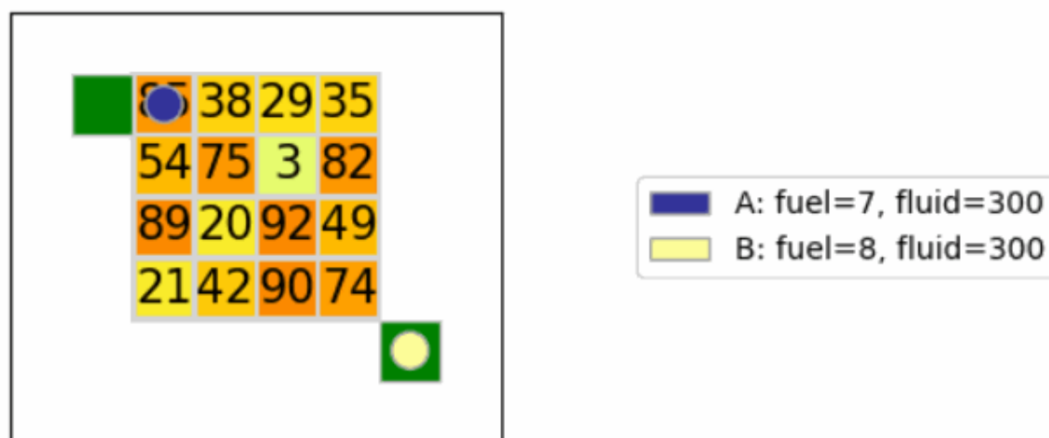*Waterloo, Canada*

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 design specifications.

Waterloo Engineering Competition 2020 - Programming Division

- 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.

Spotify-Track

```
======3:49:00 AM======
~ ███████ is listening to - Lovesick by Trevor Daniel
======3:49:20 AM======
~ ██████ is listening to - Anyone by SEVENTEEN
~ ██████ is listening to - Angel Baby by Troye Sivan
~ █████ is listening to - 永遠に by Little Glee Monster
======3:49:40 AM======
======3:50:00 AM======
~ ████ is listening to - Stereo Hearts (feat. Adam Levine) by Gym Class Heroes
~ ████ is listening to - La thune by Angèle
~ ████████ is listening to - Are You Bored Yet? (feat. Clairo) by Wallows
~ ██████████████ is listening to - Come to Life by Kanye West
======3:50:20 AM======
~ ██████████ is listening to - California Dreamin' - Single Version by The Mamas & The Papas
~ █████████ is listening to - 青花瓷 by Jay Chou
~ ████ is listening to - Jocelyn Flores by XXXTENTACION
~ ██████ is listening to - Evergreen by softy
~ ██████ is listening to - Catching On (feat. Nevve) - B-Sides Remix by Elephante
======3:50:40 AM======
~ ███████████ is listening to - Rumor by Moore Kismet
```

- Spotify does not officially support an API for friend listening activity.
- Used open-source API wrapper to track and store friend listening histories in MongoDB.