ANDY LI

< Software Engineer />

Portfolio: andyli.app
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SKILLS

Languages | C++ | Dart | Java | Javascript | MATLAB | Python | SQL
Frameworks & Libraries | Flutter | jQuery | Node.js | React.js
Tools | Docker | Bash | Git | Linux | ROS

EXPERIENCE

Software Engineering Internship Dec. 2020 - May 2021
Waterloo Autonomous Racing | Waterloo, ON

- Automated a timer in **C++** to document timings for laps, corners, and straightaways in a simulation framework.
- Created a path-optimizer in **C++** that runs continuously and determines the fastest route after a series of laps.
- Implemented a new racing-line in **MATLAB** using the path-optimizer; speeding up lap times by **20%**.
- Monitored the status of virtual machines and licensing servers using **Netdata** set up with SSH protocol.
- Built on the docker workflow to improve the team's development framework in order to assist in progress of path planning and control algorithms.

PROJECTS

Reconstruct | Flutter, Node.js, React.js | Hack the North 2021
Developed a full stack application that combines municipal data with cost efficiency to optimize how road repairs are performed.

- Built a **mobile UI** to send damage reports and images to a server for analysis using POST and **Firebase**.
- Devised a **ranking algorithm** *(budget, cost, damage, population density)* to determine which roads should be repaired first.
- Implemented a web app to display the repair cost for each damage report using the Google Maps API.

Angry Flappy Birds | Java |
Created a 2D game using graphic rendering libraries and collision detection.

- Made a fully functionable interface using object-oriented programming principles and design.
- Implemented motion and projectile physics for the user to dodge obstacles and traps.
- Incorporated a motion algorithm to automate enemy movement based on the shortest distance to the player.

Command Line Helper | Unix, Git |

- Built a full introductory guide to the **Unix Command Line** interface and **Git**.

ACHIEVEMENTS

Performance with Honours - at the *Canadian Open Mathematics Challenge* Jan. 2018
Calculus Award - perfect score of ***100%*** in *calculus and vectors* Oct. 2020

EDUCATION

University of Waterloo | Bachelor of Applied Science in Computer Engineering Expected May 2025

- GPA: 3.6/4.0
- President's Scholarship of Distinction May 2020

INTERESTS

DevOps | Data Science | Machine Learning | Web Development | Hackathons | Manga | Music | Soccer