Ryan Deng

Software Engineering | ✉ y95deng@uwaterloo.ca | 🌐 ryandeng.me | ○ @ryandeng32 | in /in/ryandeng32

SKILLS

Languages: Python, JavaScript, TypeScript, SQL, C++/C, Java
Technologies: React, Redux, PostgreSQL, MongoDB, Node/Express, Bash

EXPERIENCE

WEB APPLICATION DEVELOPER ○

University of Waterloo   *Jan. 2021 – Apr. 2021*

- Ideated and developed a **Python** program that fixes invalid documentation format across *290+* scripts, drastically improving workflow efficiency by automating what was once a manual process.
- Designed a new schema for a **PostgreSQL** database that allocates resources for *7000+* clients to improve query efficiency and the maintainability of clients' data.
- Constructed **SQL** queries to migrate *650K+* user records from the old schema and validate the imported data.
- Built **Bash** scripts to set up virtual environments in **Vagrant** for developing with **Python, PostgreSQL**, and **Apache**.

ENTREPRENEUR FELLOWSHIP ▶ ○

Conrad School of Entrepreneurship and Business   *May. 2020 – Aug. 2020*

- Awarded **top *6* out of *42* teams** in the Quantum Valley Invt. Problem Pitch Competition pitching on collaborative ideation.
- Developed Challengers, an event hosting platform with **React, Redux, Node/Express** to facilitate employee engagement.
- Designed the security system of Challengers by encrypting passwords with **Bcrypt**, storing data to **MongoDB** Cloud, and leveraging **JSON Web Token** to authorize users over HTTP requests.

SOFTWARE TEAM LEAD

FIRST Robotics Team 7022   *Sep. 2017 – Jun. 2019*

- Led a team of *4* to create a robot with **Java** that could score points by shooting balls through gaps at three different elevations, achieving **top *25%*** in the Ontario District.
- Implemented a path-following algorithm with **Arduino** and stabilized robot's movement with a PID controller.

PROJECTS

IDEACONNECT ○ *Socket.io Messaging Web Application*

- Created online chat rooms with **React, Node, Express,** and **MongoDB** to help like-minded people connect to others.
- Reduced the latency of message transactions by *70%* by implementing synchronous chatting using **Socket.io.**
- Achieved a Google Lighthouse score of *98/100* for performance and SEO on the **React** frontend.

TOP-DOWN ZOMBIE SHOOTER ○ *Python 2D Game*

- Developed a tile-based psychological horror game using **Python** with the **PyGame** library.
- Incorporated object-oriented design and sprite manipulation to implement *4* fully animated zombie species, *7* unique in-game items, *730K+* tiles of explorable areas, and an original soundtrack.

3D PONG ○ *Python 3D Multiplayer Game*

- Created a 3D pong game in **Python** that supports up to *4* players and an AI opponent.
- Built a collision algorithm that controls **VPython**'s vector object to handle collisions with irregular shapes.

EDUCATION

UNIVERSITY OF WATERLOO   Waterloo, ON

Bachelor of Software Engineering   *Sep. 2019 - May. 2024*

ACTIVITIES & INTERESTS

PUZZLE SOLVING ↗ - Competed in Rubik's Cube competitions and solved *3* by *3* cubes under *12* seconds.
PIANO & GUITAR - Volunteered as a pianist at a library, self-taught in piano and fingerstyle guitar.