Ryan Kwong

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Relevant Links: My Website | GitHub | LinkedIn
Programming Languages: Python, Java, JavaScript, TypeScript, C#, R, SQL, Dart, C, C++, HTML, CSS
Technologies: React, Django, Flask, Angular, Node, Linux, OpenCV, ROS, Unity3D, MongoDB, Flutter, TensorFlow, AWS, Git

EDUCATION

Purdue University - West Lafayette **December 2024**

BS in Computer Science

- GPA: 3.95/4.0
- Courses: OOP, DSA, Discrete Math, Linear Algebra, Multivariable Calculus, Programming in C, Computer Architecture

EXPERIENCE

Beaverton Kitchen Cabinet & Stone, Inc. **Beaverton, OR**

Software Engineering Intern January 2023 - May 2023

- Developed an internal data dashboard using React web client, Django REST backend service, and Node to display customer information and purchase history
- Architected a two-factor authentication system for the internal dashboard to strengthen security within the workplace
- Improved user organization and search efficiency with filters by reducing overall data processing time by 32%
- Created a 3D modeling software using Unity3D and C# that randomly generates kitchen layouts with a given inventory

Inogen **Goleta, CA**

Data Science Researcher August 2022 - May 2023

- Researched the correlations between mechanical aspects of portable air concentrators and their performance by analyzing and processing data on voltage, power, and oxygen levels
- Collaborated with mentors from Inogen in an Agile environment to create relevant graphs from data derived from portable air concentrators using Python, SQL, R, and MongoDB to find significant associations
- Utilized OpenCV and Tensorflow to create an OCR script that translates PDF files to CSV files with 95% overall accuracy for simple data storage of health documents

Autonomous Motorsports Club **West Lafayette, IN**

Software Developer for Motion Planning Subteam August 2022 - Present

- Building a go-kart that adapts and autonomously drives around random racetracks with arbitrarily placed obstacles
- Using Robot Operating System packages, SLAM, and path-finding algorithms to optimize the paths the go-kart will take

Autonomous Robotics Club **West Lafayette, IN**

Software Developer for Autonomy Subteam August 2022 - Present

- Utilizing reinforcement learning to train mini-race cars to autonomously score soccer goals
- Combining Python, ROS, and the Arduino to communicate between the racecar's software and hardware

Cupertino Robotics **Cupertino, CA**

Software Lead for FTC 7610 and FRC 2473 August 2018 - June 2022

- Integrated OpenCV libraries to detect markers for the robot to drive towards in real-time
- Achieved straight drive through PID control, gyroscope values, and error fixing
- Led a team of 5 students and taught the basics of Java, FTC and FRC API, finite state machines, and how to integrate software with hardware components

PROJECTS

Machine Learning Tetris Bot | Github Link | (Python, TensorFlow, Keras) **Cupertino, CA**

- Developed a machine learning bot using a Deep Neural Network and OOP principles for optimally playing Tetris
- Utilized deep reinforcement learning and Q-learning strategies to find non-greedy block placements

Quantitative Stock Prediction Web App | Github Link | (Python, Keras, sklearn, Streamlit) **Cupertino, CA**

- Training an LSTM model on historic daily closing values to predict the value of publicly traded stocks
- Users can view graphs of the predicted stock price against the actual stock price between any year range on the web app

3D Dungeon Game | Github Link | (Unity3D, C#) **Cupertino, CA**

- Collaborated with a team of 3 developers to create a first-person fantasy dungeon game
- Implemented flood fill algorithm to generate a random dungeon map on each game start
- Added a multitude of unique monsters and weapons with OOP design

Online Marketplace | Demo Link | (Java, Swing) **West Lafayette, IN**

- Created a marketplace accessible to sellers and customers using networking, multithreading, and concurrency principles
- Users can view their information dashboard, sort their products, and save and delete their accounts using File IO
- Multiple users can communicate with the marketplace server simultaneously on their own separate clients