

# Ryan Kwong

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**Relevant Links:** [LinkedIn](#) | [GitHub](#) | [My Website](#)

**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