Ryan Kwong

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Relevant Links: LinkedIn | GitHub
Programming Languages: Python, Java, JavaScript, C#, R, SQL, Dart, C, C++, HTML, CSS
Technologies: Linux, JUnit, OpenCV, ROS, SLAM, Unity3D, MongoDB, Flutter, JavaFX, Jupyter Notebook, Git

EDUCATION

Purdue University - West Lafayette **May 2024**

BS in Computer Science, Minor in Mathematics

- GPA: 4.0
- Courses: Multivariable Calculus, Discrete Math, OOP, Programming in C, Computer Science Tools

EXPERIENCE

Inogen **Virtual**

Data Engineering Intern August 2022 - May 2023

- Researching the correlations between mechanical aspects of portable air concentrators and their performance by analyzing and processing data on voltage, power, and oxygen levels
- Worked with Professor Mark Daniel Ward to create relevant graphs from data derived from portable air concentrators using MongoDB, R, Python, and SQL
- Applying Agile methodologies to efficiently communicate with Inogen and complete backlog tasks

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 High School 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
- Received the Outreach Award and Finalist Alliance Award

Private Computer Science Tutor **Cupertino, CA**

Java Tutor June 2021 - July 2022

- Created a curriculum for 20-30 elementary and middle school students to easily learn Java
- Students gained familiarity with integrating APIs and using object-oriented programming class design
- Students were able to construct personal projects such as simple games on BlueJ after 2 months

PROJECTS

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

Rate My Apartments (Flutter, Dart) **West Lafayette, IN**

- Working with a team of 8 developers to prototype an application that allows users to post ratings on apartments
- Learning how to use the Flutter framework and code in Dart

Adventure's Ends | Github Link | (Java, JavaFX) **Cupertino, CA**

- Developed a single-player role-playing game using OOP principles
- Dungeon shooter game that ends when the player clears all the monsters and bosses
- Wrote 2500+ lines of code to fully construct 10 unique levels within the game