

Ryan Gupta

🌐 Portfolio | [in](#) Ryan-Gupta | [GitHub](#) rryan21 | 📞 (530)-786-9574 | ✉️ ryangpt@umich.edu

Education

University of Michigan | Bachelor of Computer Science

- **Relevant Coursework:** Introduction to Data Structures and Algorithms, Discrete Math, Introduction to Data Science, and Harvards CS50 Introduction to Computer Science

Skills

Languages: Python, SQL, Java, C, C++, C#, JavaScript, HTML, CSS, MATLAB

Frameworks/Libraries: PyTorch, TensorFlow, Scikit-Learn, React Pandas, NumPy

Experience

MRacing Formula SAE | Computer Vision Programmer

Sep 2024 – Present

- Improved autonomous vehicle perception accuracy through refining point cloud data using advanced filtering and clustering algorithms on datasets with over **1 million** points.
- Enhanced object detection precision by implementing a RANSAC algorithm to improve LiDAR inference time by **60%**, and minimize false negative rates by **70%**.
- Achieved real-time motion planning by simulating **1,000** future paths using a Model Predictive Path Integral (MPPI) algorithm and identified the best one for the car to follow using predictive modeling.

Computers For Kids Halton - NGO | Co-Founder

Feb 2023 – Aug 2024

- Improved access to education by repairing and donating over **30+** laptops to students in the community using refurbished hardware and technical troubleshooting.
- Achieved recognition from local news and the Town of Milton by contributing to community development through laptop donations and technical support initiatives.

First Robotics Competition Team | Programmer | Engineer

Sept 2021 – Mar 2023

- Facilitated skill development for a team of **10** students by directing coding workshops during build season using hands-on training and collaborative projects.
- Contributed to competition success by programming the robot using C++ and sensor integration, enabling precise control during high-stakes matches.
- Enhanced robot design by working on the CAD model, optimizing structural components for durability and performance in competition scenarios.
- Improved robot construction by cutting and shaping precision parts, ensuring high-quality assembly and functionality for competition.

CodeNinjas. | Co-op

Jul 2023 – Aug 2023

- Empowered students by teaching coding camps, enhancing their programming skills through interactive lessons and hands-on projects using Python and Java.
- Mentored 20+ kids to create intricate games using LEGO robotics, YouTube tutorials, Microsoft MakeCode, and MCreator, fostering creativity and programming skills.

Projects

Update App

Dec 2024 – Present

- Initiated development of 'Update,' a social media app that randomly prompts users to record 1-2 minute updates, automatically sharing them with friends to foster authentic connections.

Janky Hollow Knight 🎮 | Java, Greenfoot

Jun 2024

- Learned a new IDE and game development framework by creating a simplified version of Hollow Knight using a provided template, showcasing adaptability and creative problem-solving.

VR Haptic Glove 🎮 | Arduino, Unity, C++

May 2023

- Developed an innovative VR accessory by creating a glove that responds to virtual objects using vibration feedback, enhancing user immersion and tactile interaction.
- Enhanced VR interaction by simulating a haptic glove in Unity and testing it with custom-built objects to validate gyroscope accuracy and vibration feedback.