

# Yu Shing(Rocky) Chen

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## EDUCATION

### Purdue University

GPA: 3.97

- B.S Robotics Engineering Technology
- Minor: Computer Science + Certificate: Entrepreneurship and Innovation

West Lafayette, IN

Aug 2023 – May 2027

## EXPERIENCE

### Software Lead, Purdue ACM SIGBots

Tools: *GitHub, Notion, Discord*

- Oversaw recruitment and onboarding, integrating new members and fostering a collaborative team environment.
- Managed and led a team of 20 members in developing robotics software and electronics projects.
- Coordinated project timelines and deliverables, coordinating with other subteams to meet goals and deadlines.

May 2024 – Present

West Lafayette, IN

### High School Robotics Team Coach, Park Tudor

Tools: *C, C++, Onshape, VSCode, GitHub, Zoom, Discord*

- Instructed high school students in computer-aided design, construction quality, and programming skills.
- Guided and mentored members in designing and implementing innovative solutions
- Led team to won build award and finalist in Indiana States Championship

Dec 2023 – Present

Indianapolis, IN

## PROJECTS

### PROS System Developer, ACM SIGBots CLI Subteam | *Python*

- Took part in developing PROS Robotics Operating System, an open-source project with a significant user base of over 40,000 downloads.
- Focused on creating a lightweight platform for VEX Robotics, presently implementing Bluetooth communication.

Jan 2024 – Present

### VOSS Robot Control Library, ACM SIGBots Software Subteam | *C++, C*

- Initiated and cofounded the VOSS robot control library, driving the majority of the early development stages.
- Served as Project Manager and the main developer, specializing in implementing control algorithms and compile-time assertions using generic programming to enhance user experience.

Aug 2023 – Present

### Project Cyborg, ACM SIGBots Electronics Subteam | *C++, C, Arduino*

- Designed custom PCBs to facilitate communication between VEX (RS485) and Arduino, enabling seamless access to sensors and solenoids while increasing data receive speeds by 50%.
- Introduced a handshake protocol to safeguard against data loss and maintain data integrity.

Feb 2023 – Present

### LemLib Robot Control Library, Project Manager | *C++*

- Developed and maintained LemLib, an open-source robot control library with a user base of over 4,800 downloads.
- Leading the project as project manager and one of the main developers, emphasizing user experience optimization through the implementation of design patterns, and develop several control algorithms.

May 2023 – April 2024

### Trapezoid, Sigmoid, Asymmetrical-S Curve Motion Profile | *C++, Python*

- Developed motion profile algorithms that enable robots to maneuver with specified control parameters.
- Utilized C++ and Python to calculate and visualize various motion curves, enhancing the optimization of robot trajectories.

Oct 2022 - May 2023

### Computer Vision for Roshambo Robot | *Python*

- Implemented computer vision using MediaPipe and TensorFlow, leveraging machine learning to differentiate users' hand gestures.
- Created and published an instructional video on YouTube, providing a comprehensive overview of the code's functionality and usage.

March 2022 - June 2022

## TECHNICAL SKILLS

**Languages:** English, Chinese(Mandarin), Taiwanese

**Programming Languages:** C++(Proficient), C(Proficient), Java(Competent), Python(Proficient), Rust(Novice)

**Tools:** ROS, RoboHive, FreeRTOS, Eigen, NumPy, Matplotlib, TensorFlow, MediaPipe, YAML, ini, WaveForms, IDA, Arduino, Git, Aras, Notion, Adobe, Microsoft Office

**Strength:** Innovative, Dedicated, Cooperative, Cross-cultural Collaboration