

Yu Shing(Rocky) Chen

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EDUCATION

Purdue University

West Lafayette, IN

GPA: 4.0

Aug 2023 – May 2027

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

EXPERIENCE

AP Computer Science Teaching Assistant

Aug 2022 – June 2023

Tools: Java, IntelliJ IDEA, Microsoft Word

New Taipei City, Taiwan

- Designed a comprehensive teaching schedule and material for 3 Computer Science courses
- Created an educational game, Tower of Hanoi, to serve as the teaching material
- Created a unit test system for code style checks and automatic grading

High School Robotics Team Coach, Park Tudor

Dec 2023 – Present

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

Indianapolis, IN

- 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

PROJECTS

PROS System Developer, ACM SIGBots CLI Subteam | Python

Jan 2024 – Present

- 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.

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

Aug 2023 – Present

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

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

Feb 2023 – Present

- 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.

LemLib Robot Control Library, Project Manager | C++

May 2023 – Present

- 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 main developer, emphasizing user experience optimization through the implementation of design patterns, and develop several control algorithms.

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

Oct 2022 - May 2023

- 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.

Computer Vision for Roshambo Robot | Python

March 2022 - June 2022

- 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.

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