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 *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

Open Source Developer May 2023 – Present
Tools: C, C++, CLion, GitHub *West Lafayette, IN*

- Project manger and main developer of LemLib control library, achieving over 4,800 downloads
- Main Developer of VOSS Robot Control Library, concentrated in control algorithms and structures
- Create and single handedly develop RockLib trajectory generation/following library

Mentor of high school VEX Robotics Competition Team Dec 2023 – Present
Tools: C, C++, Onshape, VSCode, GitHub, Zoom, Discord *Indianapolis, IN*

- Instruct 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 tournament champion in Indiana States Championship

PROS Robotics Operating System develper Jan 2024 – Present
Tools: Python, C, PyCharm, CLion, GitHub *West Lafayette, IN*

- A open source project with over 40,000 downloads
- Developing a light weight and open-source development platform for VEX Robotics
- Engaging in development of PROS CLI and PROS Kernal

Projects

Real-Time 2D Trajectory Generator | *C++* Aug 2023 – Present

- Develop a library that enables autonomous robots to navigate in a 2D environment
- Empower robots with the capability to self-correct their position and follow given constraints

High Performance Chassis for Robots | *Onshape, 3D Printing, Laser Cutting* Sep 2022 - July 2023

- Modeled and crafted 9 distinct robot chassis for VEX Robotics Competition during the 2022-2023 season
- Documented a few building instructions ready for publication

Trapezoid, Sigmoid, Asymmetrical-S Curve Motion Profile | *C++, Python* Oct 2022 - May 2023

- Enables robots to maneuver with specified velocity, acceleration, and other control parameters
- Computed motion curves using C++ and Python for visualization

Computer Vision for Roshambo Robot | *Python* March 2022 - June 2022

- Utilized MediaPipe and TensorFlow on machine learning for computer vision
- Released an explanatory video detailing the code's functionality on YouTube

Technical Skills

Languages: English, Chinese(Mandarin), Taiwanese
Programming Languages: C++(Proficient), C(Proficient), Java(Competent), Python(Proficient)
CAD Tools: Onshape, Rhino, Solidworks, Siemens NX
Project Management Tools: GitHub, Git, Aras Innovator, Notion