Oliver Cushman

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EDUCATION

California Polytechnic State University, San Luis Obispo (Cal Poly)
In Progress Bachelor's Degree in Computer Science | Expected Graduation Date: June 2029

Relevant Coursework: Fundamentals of Computer Science (equivalent), Introduction to Computing (equivalent), Data Structures

SKILLS

Programming Languages: Java, C++, C#, Javascript, Python
Software Tools: Git, REST API, JSON, Firebase, ROS2

PROGRAMMING PROJECTS

FRC Reefscape Robot Software, Robot Onboard Control Application: Robotics Team Project
Languages and Tools Utilized: Java, WPILib, Phoenix API, Limelight, PathPlanner, AdvantageKit, NetworkTables

- Full-stack robot control application for a robot that plays the FRC 2025 game, Reefscape
- Controls motors with PID algorithms running on data from encoders and cameras
- Autonomous functionality in gameplay using position localization with computer vision pipelines
- Realtime and post-match data logging for easy debugging

FRC Scouting App, Web Application: Robotics Team Project
Languages and Tools Utilized: JavaScript, React, Firebase, JSON

- Mobile-intended web application for evaluating robots at competition
- Custom React-based widgets
- Clean and simple UI for ease-of-use at competition
- Data storage in JSON-like structure in Firebase

PatriTuner/PatriDashboard, Web Application: Robotics Team Project
Languages and Tools Utilized, TypeScript, React, Electron, NetworkTables

- Custom React-based web dashboard made for tuning constants in robot software
- Updating values in dashboard updates constants in running robot program
- Dashboard connects to the same network as the robot using NetworkTables 4 protocol
- Makes it extremely easy to tune constants

Flashcard App, Web Application: Computer Science Club Project
Languages and Tools Utilized: JavaScript, React, Firebase

- Flashcard website specialized for courses at our own high school
- Flashcard decks, users, and user progress on flashcard decks stored in Firebase
- Users authenticated with Firebase
- Clean frontend UI for simplicity

ACTIVITIES

Robotics Team Programmer & Driver

- Wrote vast majority of robot code in 2025 season and contributed significantly in 2024 season
- Motor controls, sensor data handling, subsystem programming, driver control programming and autonomous control programming
- Frontend for internal robot evaluation websites
- Drove robot at competitions including world championship in 2025 season

Computer Science Club Member

- Worked on flashcard website
- Participated in programming competitions