

# Nathan Tran Huang

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<https://github.com/nthuang> • [nthuang.github.io](https://nthuang.github.io)

Second-year Computer Science student at California Polytechnic State University seeking a software engineering internship opportunity to leverage my programming skills and gain hands-on experience in real-world projects.

## EDUCATION

### California Polytechnic State University, San Luis Obispo

San Luis Obispo, CA

Bachelor of Arts in Computer Science

Sept 2023 - June 2027

Concentration in Artificial Intelligence and Machine Learning | Minor in Data Science

#### Relevant Coursework:

Design and Analysis of Algorithms, Systems Programming, Discrete Structures, Introduction to Computer Organization, Project-Based Object-Oriented Programming and Design, Data Structures

## EXPERIENCE

### Cal Poly Robotics - UROV Team

San Luis Obispo, CA

Software Engineer

Sept 2024 – Present

- Developing algorithms for the UROV (Underwater Remotely Operated Vehicle) in the 2025 MATE ROV Competition, focusing on localization and navigation.
- Integrating SLAM with OctoMap to create and continuously update a 3D occupancy grid, facilitating real-time position tracking of the robot.
- Implementing A\* for efficient global pathfinding, leveraging the 3D map from OctoMap to determine optimal routes while avoiding obstacles.
- Applying DWA to enable real-time adjustments to the robot's path, ensuring safe navigation in dynamic underwater environments.

### Cal Poly Racing - Formula SAE

San Luis Obispo, CA

Firmware Engineer

Sept 2024 Year – Present

- Collaborate with the electronics and firmware subsystem to learn and implement firmware development practices through hands-on onboarding projects;
- Currently engaged in aerocan refactoring to improve the efficiency and functionality of existing firmware for aerodynamics monitoring systems.
- Work alongside experienced members to gain knowledge in circuit design, firmware coding, and system testing.

## PERSONAL PROJECTS

### FitForge | React.js, RESTful API, Node.js, Express.js, MongoDB, JavaScript, ExerciseDP API

Summer 2024

- Developed a full-stack fitness management application using React, Node.js, and MongoDB, enabling users to explore, search, and organize a database of over 1,300 exercises.
- Built and deployed RESTful APIs to handle exercise data storage and retrieval, leveraging Axios for smooth communication between the React frontend and Node.js backend.
- Optimized data fetching and storage processes in MongoDB for efficient access and updated exercise images, ensuring a seamless user experience.

### Spotlist | React.js, JavaScript, Spotify API, OAuth 2.0, Fetch API, CSS, HTML

Summer 2024

- Developed a React.js application integrated with the Spotify Web API to allow users to search for tracks, create playlists, and save them to their Spotify account.
- Integrated OAuth 2.0 for secure user authentication, enabling access to Spotify data and managing API requests for song searches and playlist creation.
- Utilized fetch API to communicate with the Spotify API and handle JSON data, supporting dynamic search functionality and playlist persistence.

## SKILLS & INTERESTS

**Programming Languages:** Python, JavaScript, Java, C, C++, SQL, R

**Web Development & Tools:** HTML, CSS, React, Node, Express, RESTful APIs, MongoDB, MySQL, Postman, npm, Axios, Git, GitHub, VS Code, IntelliJ

**Data Science & Analysis:** NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, TensorFlow, Jupyter Notebook

**Concepts:** Data Structures & Algorithms, Object-Oriented Programming, Software Development Lifecycle

**Interests:** Software engineering, Web Development, Artificial Intelligence, Machine Learning, Data Science