Oscar Rangel

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EDUCATION

University of Michigan, College of Engineering   **Ann Arbor, MI**
Bachelor of Science in Engineering, Computer Science and Engineering   April 2025
Bachelor of Science, Mathematics
- Coursework: Data Structures & Algorithms, Advanced Operating Systems, Computer Security

WORK EXPERIENCE

Stryker   **May 2024 – August 2024**
Embedded Software Engineering Intern
- Designed domain-specific language and interpreter to automate testing of medical devices.
- Developed a CI/CD pipeline to integrate previously established code quality, automated testing, and quality assurance processes.
- Wrote an image processing application to increase the efficiency of test generation processes.

University of Michigan   **August 2024 – Present**
Advanced Operating Systems (EECS 482-498) Teacher's Aid
- Taught operating systems principles by holding office hours, individual mentoring sessions with student groups and answering questions on an online learning platform.
- Mentored over twenty students by providing individualized learning plans and class support.

Triple-S Health   **June 2023 – August 2023**
Technology & Plan Administration Intern
- Created a web application using React and Typescript to streamline the process of onboarding newly accredited healthcare providers.
- Optimized the storage protocols for datasets of over 3 million entries leading to a reduction of data storage costs, shorter entry lookup delays, and improved system performance

PROJECTS

Collaborative Lab for Advancing Work in Space   **September 2023 – Present**
Feature Team Lead
- Built a highly concurrent web app for NASA mission control administrators, flight controls engineers, and astronauts assigned to upcoming missions using React, Typescript, and MongoDB
- Implemented scalable API services and back-end infrastructure using EC2 instances, Elastic Beanstalk load balancers, and Route53 DNS handlers
- Directed a team of 9 students in implementing product features requested by NASA astronauts
- Integrated machine learning models, UI/UX designs, and third-party software into our web app.

University of Michigan Autonomous Robotic Vehicle Team   **August 2022 – Present**
Navigation Team Member
- Wrote, analyzed, and tested path-planning algorithms (A* and D* Lite) using real-world data i.e., occupancy grids, and terrain maps
- Programmed simulations to test path-planning algorithms on by collecting LiDAR information and modifying the maps generated by the data with image editing tools
- Engineered multi-threaded C++ program to link path-planning algorithms with odometry systems
- Onboarded new team members by making presentations, exercises, and technical documentation

SKILLS

Programming Languages: C++, C, Python, JavaScript, Typescript, Swift, Matlab
Other: AWS, Git, Fluent in Spanish, React, Statistics, Linear Algebra, Machine Learning