

# Nathan Ramon Lau

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## EDUCATION

### University of Virginia | School of Engineering and Applied Sciences

B.S. in Mechanical Engineering, Minor in Electrical Engineering

Charlottesville, VA

August 2024 – May 2027

Cumulative GPA: 3.80

Honors: Dean's List (Academic Year: 2024-25)

## RELEVANT EXPERIENCE

### BIER Lab at UVA

Robotics Researcher

Charlottesville, CA

August 2025 – Present

- Retrofitted a robotic fish drone with computer vision capabilities and developed pressure sensor control algorithms for autonomous navigation through water turbulence
- Streamlined the testing procedures in the lab via the use of Linux based systems and custom Python data analysis tools

### Bio-Inspired Underwater Robotic Submersible Team

Lead Engineer

Charlottesville, VA

August 2024 – Present

- Led the Structures and Safety team of 5 students through ground-up designing and manufacturing targeting the 2026 MATE ROV Competition
- Designed and tested the ROV frame using CAD, FEA, CFD and buoyancy calculations to engineer dynamic buoyancy controls for depth adjustment along with a detachable power distribution module

President

August 2025 – Present

- Organized a team of 20+ students, setting goals, structuring timelines to ensure competition readiness as well as creating bill of materials for the 2025-26 academic year

### Gizmology

Project Engineer

Charlottesville, VA

August 2025 – Present

- Designed, prototyped, and 3D printed interactive engineering projects for university students, in and around UVA's engineering facilities, showcasing exciting and playful engineering, blending art with technology

### Quadruped Robot

Engineer

Arlington, VA

January 2025 – Present

- Built and developed a functional quadruped robot dog, combining mechanical design, firmware development, 3D printing, and servo motors with the goal of walking freely
- Used an Arduino and later an ESP32 to implement robotic motion, utilizing inverse kinematics for leg manipulation
- Set up a ROS2 interface to create gait paths for lifelike animations as well as wireless remote control

## WORK EXPERIENCE

### University of Virginia Climbing Center

Climbing Center Supervisor

Charlottesville, VA

February 2025 – Present

- Manage daily operations of UVA's Student Climbing Center ensuring safety and community engagement, overseeing crowds of up to 40 people

### Arlington County Parks & Recreation

Gymnastics Coach

Arlington, VA

June 2023 – August 2025

- Taught gymnastics and facilitated creative activities for children ages 6 - 10, in groups of 10, changing weekly, for 9 weeks
- Completed safety and inclusion training: workplace safety, injury protocols, fire/hazard response, CPR certified

## TECHNICAL SKILLS & ACTIVITIES

**Society of Hispanic Professional Engineers:** Active member participating in professional development events and attended the 2026 SHPE National Convention

**Design and Programming:** SolidWorks (CSWA Certified), Fusion 360 , AutoCAD, Revit, Onshape, Python, C, C++, MATLAB, HTML, JavaScript, Microsoft 360 (Excel, Word, PowerPoint)

**Mechatronics:** 3D Printing, Arduino, ESP32, ROS2, Custom PCB Design, G-Code, Injection molding, CNC machining

**Languages:** Fluent in English and Spanish