Nathan Ramon Lau

nrl80877@gmail.com | (571) 355-5253 | Arlington, VA

EDUCATION

University of Virginia | School of Engineering and Applied Sciences — **Charlottesville, VA**
B.S. in Mechanical Engineering, Minor in Electrical Engineering — *August 2024 – May 2027*
Cumulative GPA: 3.80
Honors: Dean's List (Academic Year: 2024-25)

RELEVANT EXPERIENCE

BIER Lab at UVA — **Charlottesville, VA**
Robotics Researcher — *August 2025 – Present*
- Retrofitted a robotic fish drone with pressure sensor control algorithms for autonomous navigation through water turbulence
- Designed and fabricated a custom experimental rig, executed controlled testing on the Tunabot to develop a computer vision model that enables real time fish recognition for future autonomous schooling behavior
- Used Python based computer vision software to track fish speed and direction in conjunction with a Hailo processor for real time feedback

Bio-Inspired Underwater Robotic Submersible Team — **Charlottesville, VA**
Lead Engineer and President — *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 and buoyancy calculations to engineer dynamic buoyancy controls for depth adjustment along with a detachable power distribution module
- 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 — **Charlottesville, VA**
Project Engineer — *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 — **Arlington, VA**
Engineer — *January 2025 – Present*
- Built and developed a functional quadruped robot dog, combining mechanical design, 3D printing, and electrical assembly with the goal of walking freely
- Used an Arduino and ESP32 to implement robotic motion, utilizing inverse kinematics for leg manipulation using 12 servo motors
- Set up a mock ROS2 interface to create gait paths for lifelike animations as well as wireless remote control

WORK EXPERIENCE

University of Virginia Climbing Center — **Charlottesville, VA**
Climbing Center Supervisor — *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 — **Arlington, VA**
Gymnastics Coach — *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