

Nathan Ramon Lau

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EDUCATION

University of Virginia

B.S. Mechanical Engineering, GPA: 3.80

Relevant Coursework: Computer Aided Design, Thermodynamics, Statics, Linear Algebra, Sustainability Science

Charlottesville, VA

Aug. 2024 – Present

Washington-Liberty High School

International Baccalaureate Diploma

Arlington, VA

Aug. 2020 – May 2024

RELEVANT EXPERIENCE

Robotics Researcher at BIER Lab | Lab Testing, Python

Aug. 2025 – Present

- Retrofitted a Tuna fish robotic 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

Lead Engineer, Bio-Inspired Underwater Robotic Submersible Team | Project Management Aug. 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
- Organized a team of 20+ students, setting goals, structuring timelines and creating component ordering lists to ensure competition readiness

Quadruped Robot | CAD, Arduino, ROS2, ESP32

Jan. 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

Gizmology | Product Design, Collaboration

Aug. 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

WORK EXPERIENCE

Climbing Center Supervisor

University of Virginia Climbing Center

Feb. 2025 – Present

Charlottesville, VA

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

Gymnastics Coach

Arlington County Parks & Recreation

June 2023 – Aug. 2025

Arlington, VA

- 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

Languages: Fluent in English and Spanish