Carlos Anthony Rivas

253-548-6615 | carivas007@gmail.com | 2640 64th St NW, Gig Harbor, WA 98335

Education

Montana State University, College of Engineering — Bozeman, Montana
Bachelor of Science in Computer Engineering — August 2022 – December 2025

- Minor in Computer Science: Machine Learning — Cumulative GPA: 3.83 | Major GPA: 3.72

Relevant Experience

California Institute of Technology — Pasadena, California
Information Science and Technology Venerable WAVE Fellow Research Intern — May 2025-Present

- Worked on improving autonomous vehicle perception for Indy Autonomous Challenge — 40-60 Hours/Week
- Fused sensor inputs into a unified bird's eye view space to enhance opponent vehicle detection
- Currently working on improving sensor fusion implementation, writing research paper

Montana State University ECE Department — Bozeman, Montana
Teaching Assistant — January 2025-Present

- Assisted with teaching duties for a senior level C++ embedded systems class — 5 Hours/Week
- Specific tasks include lecturing, grading, and individual instruction

Montana State University BMW Research Laboratory — Bozeman, Montana
Machine Learning/Signal Processing Research Assistant — August 2024-Present

- Collaborated on project for USAF aimed at characterizing drone traits from lidar/audio data — 5 Hours/Week
- Created an automated test bench for collecting audio and lidar data
- Produced 2 peer-reviewed publications, extensively utilized MATLAB, Python

Johns Hopkins University Image Analysis and Communications Laboratory — Baltimore, Maryland
Computational Sensing and Medical Robotics Research Intern — May 2024-March 2025

- Developed algorithm for identifying distinct white matter lesions in brain MRI — 40-50 Hours/Week
- Collaboratively developed program in Python to integrate into image processing pipeline
- Research presented at the 2024 Leadership Alliance National Symposium
- Produced 2 peer-reviewed publications; attended the proceedings of SPIE Medical Imaging

Idaho National Laboratory Center for Advanced Energy Studies — Idaho Falls, Idaho
Industrial Robotic Arm Tool-Changing Mechanism Research Intern — May 2023-July 2023

- Developed mechanical, electrical, and software design of a novel tool-changing mechanism — 40 Hours/Week
- Presented product at the Idaho Conference for Undergraduate Research (ICUR)
- Design was developed using SolidWorks, C++, and currently has a patent pending

Publications

- (Pending publication) Zhang J., **Rivas C.A.** et al. (2025). Automated Unique Lesion Tracking Over Time for Subject-Specific Longitudinal Analysis. Johns Hopkins University Image Analysis and Communications Laboratory.
- (Pending publication) Weller W.W., Vannoy T.C., Shea S.L., Glenn E., **Rivas C.A.** et al. (2025). Using Wingbeat-modulation Lidar for UAV Propeller Frequency Detection. Montana State University BMW Laboratory.
- **Rivas C.A.** et al. (2024). Unique MS Lesion Identification from MRI. Johns Hopkins University Image Analysis and Communications Laboratory.
- **Rivas C.A.**, Deemyad T. (2023). Automatic Tool Changing Mechanism for Industrial Robotics Arms. Idaho National Laboratory Center for Advanced Energy Studies.

Skills/Interests

Programming:	MATLAB, Java, Python (including PyTorch, Pandas), C, C++, Assembly, VHDL, LaTeX, UML, GitHub, various IDEs
Other Software:	SolidWorks, Altium Designer, Microsoft 365, Windows, Mac OS, Linux, RobotStudio, PrusaSlicer, Cura, LTspice
Leadership:	Leadership Alliance National Symposium oral presenter, program organizer for Head and Neck Cancer Alliance volunteer event, high school Sailing Club vice president, National Honor Society, self-employed tech repair
Volunteer:	Volunteer sailing instructor (over 400 accumulated hours), Head and Neck Cancer Alliance event organizer
Awards:	Johns Hopkins: Vivien Thomas Fellow, SPIE 1st place poster award, Montana State: dean's list (2022-2025), Tau Beta Pi + HKN honor society member, Astronaut Scholarship Foundation 2x nominee, Sigma Phi Epsilon Balanced Man scholarship finalist, high school valedictorian (maintained 4.0 unweighted GPA)
Interests:	Sailing, general aviation, rock climbing, skiing, fly fishing, mountain biking, being outdoors, teaching, tinkering