Rowan J. Lodato

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EDUCATION

Duke University, B.S.E | GPA 3.88/4.0; Dean's List with Distinction Fall 2024, Spring 2026; Dean's List Fall 2025 May 2028
Pratt School of Engineering: Mechanical Engineering (Major), Aerospace Engineering (Certificate) *Durham, NC*
Relevant Coursework: Dynamics; Structures and Properties of Materials; Electrical Fundamentals of Mechatronics; Thermodynamics; Statics and Mechanics of Solids; Matrices and Vectors; Multivariable Calculus; Differential Equations

TECHNICAL EXPERIENCE

Aero Rocketry Club August 2025 – Present
Payload Engineer *Durham, NC*

- Designed and tested a guided recovery system in Onshape, optimizing parachute geometry, stability, and descent rate.
- Evaluated transparent enclosure materials to meet impact, weight, and video performance requirements.
- Developed an energy harvesting system that generates power from drag-induced motion during descent.
- Manufactured payload components via CNC milling and turning, maintaining dimensional accuracy and structural strength.

Autonomous Precision Airdrop UAV May 2026 – Present
Project Lead *Durham, NC*

- Designing and building a fixed-wing UAV with autonomous GPS waypoint navigation and servo-actuated payload release bay, using ArduPlane on a Matek flight controller with a Raspberry Pi companion computer for onboard drop logic
- Performing full design cycle including airfoil selection via XFOIL, 3D CFD, FEA-validated structural analysis, and FDM/foam composite manufacturing; conducting iterative flight test campaign to characterize drop accuracy

Humanitarian Energy Generation Toy August 2024 – April 2025
Mechanical Engineering Lead *Durham, NC*

- Designed and prototyped a human-powered energy generation system, converting rotational motion into electrical power via a gearbox-driven motor and rectification circuitry
- Engineered a sprocket transmission system to increase motor RPM and achieve ~10 W power output at ~45 RPM input speed; tested alternative methods to improve input-output efficiency, including flywheel designs and motor types

Duke Aviators Club January 2024 – Present
Aerospace Engineer *Durham, NC*

- Designed and assembled a flight simulator system, modeling and fabricating custom components, for use in pilot training and club activities
- Contributing to aviation-focused events, educational initiatives, and hands-on projects that promote community engagement and outreach

WORK EXPERIENCE

Duke University Aeroelasticity Research Group May 2026—Present
Research Intern *Durham, NC*

- Working with Professor Earl Dowell to determine the natural bending and torsion frequencies of a bent wing-tip airfoil
- Developing and testing models using OnShape, SolidWorks, ANSYS Mechanical, and Duke Wind Tunnel to conduct analyses

Twin Health June 2025 – August 2025
Data Analytics Intern *New York, NY*

- Developed a Markov chain model to forecast member user engagement transition to enhance member experience
- Utilized Python and SQL for data processing developing new revenue model for Twin's engagement performance framework

RowingByTheNumbers February 2025 – Present
Co-Founder and Data Analytics Lead

- Successfully built and scaling a rowing analytics social media platform to 1.2M+ monthly views in 1 year
- Developed and published data-driven performance rankings and predictive models for collegiate and youth rowing, applying statistical analysis to inform competitive insights
- Engineered content workflows and managed large-scale community interactions delivering timely, high-accuracy reporting

SKILLS & INTERESTS

Software + Programming: OnShape | SolidWorks | Fusion 360 | ANSYS | KiCad | Arduino | Python | Java | SQL | MATLAB
Fabrication: 3D Printing | Laser Cutting | Waterjet | CNC Milling | Lathing
Interests: Competitive Rowing | Flying | Photography | Spanish | Cooking | Social Media