# Román Salinas, Dennis Joel

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## EDUCATION

**Georgia Institute of Technology (GT)**, Atlanta, GA — Expected December 2027

Bachelor of Science in Aerospace Engineering; **GPA: 4.00**

- **Notable Coursework:** Fluid and Thermodynamics, Aerodynamics, Jet and Rocket Propulsion, Deformable Bodies
- **Academic Awards**: Faculty Honors & Dean's List

## SKILLS

- **Spoken Languages:** Spanish (Native), English (Native)
- **Computer Aided Design:** CATIA (3DEXPERIENCE), Solidworks, Fusion 360, OnShape, Blender
- **Thermal/Fluids Simulation:** ANSYS, Star-CCM+, OpenFOAM, ABAQUS (Simulia), XFOIL, AVL-based Codes
- **Manufacturing/Shop:** Carbon Fiber Manufacturing, Demolding, Sanding, Layups, Lathes, CNC, 3D Printing, Laser Cutters
- **Programming & Automation:** MATLAB, Python, C++, Java, Bash, YAML-based Workflows

## RESEARCH & EXPERIENCE

**Multiphase Aerodynamics Summer Research Intern** — June 2025 - January 2026

*Flow Physics and Computational Science Lab*

- Built a reproducible Multiphase CFD workflow (YAML, Python, Bash) with dependency checks, caching, and restart logic to reduce setup time and rerun waste.
- Reproduced Ice Prediction Workshop icing cases in FENSAP-ICE (Flow, DROP3D, ICE3D), including mesh independence studies and multi-bin droplet runs.
- Standardized post-processing and cross-code comparisons using Tecplot; used STAR-CCM+, OpenFOAM and XFOIL verification tracks to diagnose solver-to-solver discrepancies.

**Numerical study of the near field vortical structure in a reacting jet in crossflow** — November 2025 - Present

*Ben T. Zinn Combustion Lab*

- Learned and applied OpenFOAM to set up reacting jet in crossflow CFD cases relevant to combustor mixing, focusing on near-field vortical structures and shear layer dynamics.
- Implemented heat-transfer and wall thermal loading extraction from simulations to support thermal-management decision making in reacting crossflow configurations.

**Simulations of Electric Propulsion Exhaust** — November 2025 - Present

*High Powered Electric Propulsion Lab*

- Supported electric-propulsion plume analysis by building post-processing scripts to quantify plume structure metrics such as angular plume divergence and current-density profiles used in plume characterization.
- Participated in an acrylic vacuum-chamber refurbishment for electric-propulsion testing; verified roughing/turbo pump-down and pressure-gauge operation, installed internal support structure, and coordinated ion-probe motor integration.

**Undergraduate Teaching Assistant, Aerospace Dynamics (AE 2220)** — December 2025 - Present

*Georgia Tech - Daniel Guggenheim School of Aerospace Engineering*

- Serving as a Dynamics Teaching Assistant, supporting students through recitations and office hours by explaining core rigid-body and particle dynamics concepts and helping troubleshoot problem-solving approaches.

## PROJECTS

**HyTech Racing Formula SAE-EV - Aerodynamics and Composites Engineer** — December 2024 - Present

- Supported the 2024-2025 aero package with rear-wing development for an all-electric Formula SAE car; applied aerodynamic reasoning and on-car checks to converge designs while meeting drag and cooling limits.
- Organized side-aero concept development for the 2025-2026 configuration; coordinated rapid iteration across interacting devices such as front, rear wings, floor, and radiator ducting to improve aero performance without breaking packaging constraints.
- Led aero verification and correlation using flow-visualization (tufts/flow-vis) and pressure-point measurements; enforced configuration discipline and repeatable test conditions so results translated into clear next-iteration decisions.

**Aeroelastic Surrogate for Flexible Composite Wings - CFD to Structures Study** — June 2025 - December 2025

- Built an automated workflow coupling ANSYS Fluient, Mechanical and ANSYS Composite PrepPost to predict static deflection, twist, and drag of a composite wing across changes in dynamic pressure.
- Developed a one-dimensional MATLAB finite-element surrogate that recovers bending and torsional stiffness (EI, GJ) from a single ANSYS baseline; matched experimental test stiffness within 1.00 percent average error.

**Amateur Motorsports Aerodynamic Development - Mazda MX-5 (NC)** — May 2025 - August 2025

- Developed and iterated external aero concepts through CAD and CFD while producing comparative results used to select geometry under packaging, mounting, and clearance constraints.
- Implemented motorsport CFD setup features such as moving ground, rotating wheels, ride-height sensitivity, near-wall prism layers and maintained consistent meshing/post-processing to enable fair concept comparisons

## LEADERSHIP AND INVOLVEMENTS

**AIAA (Outreach Committee), Sigma Gamma Tau (Member), SHPE (Member), GTBori (Member)**

- Part of the AIAA outreach committee while engaged in organizing aerospace-focused research seminars, leadership opportunities, and professional development events.
- Active in a professional network fostering leadership, mentorship, and technical development within the Hispanic engineering and Puerto Rican communities.