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 using YAML, Python and Bash with dependency checks, caching, and restart logic to reduce setup time and rerun waste.
- Reproduced NASA's Ice Prediction Workshop icing cases in FENSAP-ICE coupling with 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.
- Developed and validated a reduced-order combustion modeling workflow to replace Cantera based preprocessing, improving solver coupling consistency and reducing simulation setup time and improving computational efficiency.

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 and pressure-point measurements; enforced configuration discipline and repeatable test conditions so results translated into clear next-iteration decisions.
- Contributed to composite component development and manufacturing delivering parts 6 weeks ahead of schedule.

Advanced Modeling & Aerodynamic Development Projects — August 2023 - Present

Full Technical Work: romanaero.com

- Developed a motorsports aerodynamic concept study for a Mazda MX-5 (NC) using CAD and CFD, including moving ground, rotating wheels, ride-height sweeps, and near-wall prism layers for future manufacturing.
- Built an aeroelastic surrogate that couples ANSYS to a MATLAB beam model to predict composite wing deflection and twist across EI/GJ scales, matching baseline response within a 1% average error.
- Performed aerodynamic design and validation across motorsports, reacting flows, propulsion plumes, and composite structures by integrating simulation, post-processing automation, and experimental correlation.

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.