Yanquiel Bosques

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Education

B.S Aerospace Engineering **May 2028**
Georgia Institute of Technology, Atlanta, GA
Relevant Coursework: Aerodynamics, Thermodynamics, System Dynamics & Vibrations, Vehicle Performance, Deformable Bodies, Statics, Differential Equations.

Skills

- **Certifications:** Microsoft Office (certified in Excel), Business Management (certified), HTML & CSS (certified).
- **Spoken Languages:** English (Fluent), Spanish (Fluent), French (Intermediate).
- **Technical Skills:** SolidWorks, AutoCAD, Ansys, MATLAB, HTML, CSS, Java, GMAT, Python.
- **Logistical:** Communication, Project Management, Leadership, Group Problem Solving, Education, Failure Analysis
- **Hands-on:** Precision Tube Bending, Flaring & Fitting, High-Pressure Gas System Assembly, Cryogenic Fluid System Fabrication, Proof & Leak Testing, P&ID Interpretation & System Routing

Experience

Propulsive Landers at Georgia Tech, Atlanta, GA **October 2025 - Present**
Injector Design Project Lead

- Executing complex Computational Fluid Dynamics (CFD) simulations to analyze injector flow characteristics and thermal gradients within a 1,000N thrust hybrid rocket engine.
- Optimized engine performance by correlating CFD simulation data with results from recent static fire tests to refine injector geometry and combustion stability. Increased combustion efficiency by 25%.
- Developing propulsion parameters for a hybrid lander prototype designed to achieve a 50-meter vertical hop and a controlled, safe descent through precise throttling.

Yellow Jacket Space Program, Atlanta, GA **September 2025 - Present**
Turbomachinery Engineer

- Designing a 13,000 RPM, 15kW gas generator powered turbine in SolidWorks and CFTurbo, running cycle models to meet propellant feed targets for the Elytra space-shot vehicle.
- Conducting injector trade studies and CFD simulations in ANSYS Fluent to optimize atomization, mixing efficiency, and combustion stability.
- Validating turbomachinery fluid paths and thermal limits via coupled CFD and CAD analyses, driving flight hardware integration to support a record-setting space launch.

Vertically Integrated Projects at Georgia Tech, Atlanta, GA **August 2026 - Present**
Exascale Computational Fluid Dynamics Researcher

- Optimizing simulation convergence stability in a Large Eddy Simulation (LES) of a turbopump and a coaxial swirl injector by refining mesh quality and optimizing solver settings in Ansys Fluent.
- Conducting parametric studies on mesh density and solver settings to identify configurations that improve simulation convergence and correctness.
- Submitting and presenting the findings from the injector research to the AIAA SciTech Forum in January 2027.

Lavner Education STEM Instructor, Miami, FL **July 2025**

- Instructed 24+ students on machine learning foundations by facilitating hands-on projects with Teachable Machine to train custom AI models recognizing unique image and voice patterns.
- Simplified complex topics like deepfakes and ChatGPT into interactive lessons that fostered critical thinking regarding the societal and ethical impacts of contemporary emerging technology.

Projects

Skypia: Artificial Gravity Space Station January 2026 - Present

- Engineered the structural layout and orbital mechanics for a rotating space station, utilizing MATLAB and Ansys to optimize a dynamic mass-balancing counterweight system.
- Developed a comprehensive 3D CAD model in SolidWorks and AutoCAD, conducting rigorous static structural simulations to validate truss integrity under variable centrifugal loading conditions.

Frequency Locomotion Research Project

- Fabricating experimental surfaces featuring integrated pendulums via 3D printing to investigate frequency-based locomotion through controlled mechanical vibrations.
- Achieved full directional control of surface movement by modulating Hertz-specific vibrations, a novel capability currently lacking in existing scientific literature.