Eric Anthony Comstock, M.S.A.E.
Eric.Comstock@gatech.edu (832) 718-1150 ericanthonycomstock.com

M.S. in Aerospace Engineering and U.S. Citizen seeking Fall '25 or Spring '26 Aerospace Engineering Internship

Education:

PhD. Student (current), Georgia Institute of Technology (GPA 3.92/4.0)
M.S. Aerospace Engineering, Georgia Institute of Technology, Dec 2024, (GPA 3.9/4.0)
B.S. Aerospace Engineering *magna cum laude* with Engineering Honors,
Texas A&M University - College Station, Minors: Math and Chemistry
Dec 2022, (GPA 3.89/4.0)

Technical Skills:

Advanced: Python, R, Matlab, LaTeX
Proficient: COMSOL Multiphysics, Solidworks 3D Modeling, VeusZ, General Mission Analysis Tool (GMAT), OpenMDAO
Intermediate: HTML, C++, Wolfram Mathematica, NEQAIR, Pointwise, US3D, SIMION 2020
Applied Math: Finite Difference Method and Finite Element Analysis for hyperbolic and parabolic PDEs in arbitrary-dimensional spaces, Rigid Body Dynamics, Runge-Kutta 4, Least Squares Method, Control Systems Analysis (linear and non-linear methods), Multivariate Statistics

Soft Skills:

Extensive leadership and teamwork skill development (please also see Co-curricular activities section for more detail):
Graduate (Current) - leading an undergraduate research team, holding leadership positions in my faith community, and mentoring/tutoring
Undergraduate - contributed to 3 different research lab groups. participated in AggiesInvent where I led a team while working under strict time limits, and served as president of the Lone Star College Chemistry Club

Internships:

The Aerospace Corporation, Summer 2024

- Debugging, refactoring, and integrating communications, plotting, and data processing software for an Aerospace internal space object catalog
- Abstraction of an event-based logistics modeling simulation system from use in a specific application to more general use for arbitrary vehicles and cargo elements, using JSON configuration files
- Invented a group of software engineering initiatives, scalable to any database application, to make code easier to use, easier for onboard training, easier for debugging, and easier for the project to be expanded to more contributors

Co-curricular Activities:

Team Lead – Analysis of Rotational Habitat Atmosphere Dynamics Project (current)

- Leading 5 undergraduate researchers analyzing the feasibility of containing atmospheres using rotational gravity in large space habitats and quantifying the loss rates thereof

Doctoral Research (2023 – present)

- Simulation of magnetohydrodynamic propulsion systems where induced electric currents and magnetic fields accelerate ambient plasma in orthogonal directions, thus providing thrust
- Creation of a Vlasov simulator using Python to improve simulation accuracy, further verify the models, and quantify momentum transfer processes in the low Earth orbit plasma environment
- Optimization of a spherical mirror surface generated by an electromagnetically modified ferrofluid-based liquid mirror in both terrestrial and lunar gravity environments

Undergraduate Research (2021 – 2022)

- CFD simulation of spectra of chemically reacting hypersonic flows in a Mach stem
- Computational modeling of a laser refracted through a particle beam, incorporating low-density effects and the modeling of quantum absorption and refraction spectra
- Creation of a Raman spectroscopy simulation program in Python simulating rotational-vibrational spectra for use in hypersonic flow spectroscopy

Mentoring and Tutoring High Potential Youth (2022 – present)

- One-on-one mentoring and group tutoring of high potential youth in programming, calculus and orbital mechanics

Tech Wesley Faith Community (2024 – present)

- Leadership positions as Meal Coordinator and Audio/Visual Chair

Honors and Awards:

- April 2024 – National Science Foundation Graduate Research Fellowship Program (NSF GRFP)
- Fall 2023 – Goizueta Foundation Fellowship at Georgia Tech – Fellowship recipients bring exemplary levels of scholarship and innovation to the academic departments that host their study and research.
- Tau Beta Pi, National Engineering Honor Society, November 2020