JAMES CHAMBERS

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EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY Expected Graduation: Fall 2026
Aerospace Engineering
Guidance Navigation and Control Rocket Club, Outdoor Recreation at Georgia Tech
GPA: 4.0

WORK EXPERIENCE

CleverCX
Research and Development Intern May 2025 - August 2025
- Independently created a financial simulation-based calculator incorporating python code, large datasets, and Monte-Carlo methods to optimize a user's financial profile, providing experience with statistics and large-scale simulations.
- Developed a functional app incorporating market research and my previous experience with AI research. Later assisted with professional development and design of said application.

CleverCX
AI Research Intern May 2024 - August 2024
- Assisted a close-knit team in growing the business of a start-up fintech company.
- Researched various uses of AI in the market, engaged in testing and quality assurance of the company's AI assistant, and worked with various team members to develop skills including web development, UX/UI, prompt engineering, SEO, and data management.

SPECIAL ACTIVITIES AND LEADERSHIP

Guidance Navigation and Control Rocket Club
Structural Engineer September 2023 - Present
- Designed, modeled, and manufactured several essential subsystems, including a gimbaling actuation system to achieve thrust vector control.
- Worked with a team of many other students to plan, computationally model, integrate, and assemble a guided rocket.
- Authored an article on the effectiveness of Thrust Vector Control published with the American Institute of Aeronautics and Astronautics.

Undergraduate Research - Analysis of Rotational Habitat Atmosphere Dynamics
Solar Wind Lead May 2025- Present
- Developed code for collisionless atmosphere dynamics. Code includes numerical integration techniques and analysis, partial differential equations, and Monte Carlo simulations.
- Led a team of other students, learning how to collaborate and transform research on collected astronomical data into accurate, dynamic models of the upper atmosphere, gaining experience on research translation, data analysis, and teamwork.

PERSONAL PROJECTS

Solid Rocket Motor Design
Independent Project July 2025 - August 2025
- Designed and fabricated a laboratory-scale solid rocket motor using composite propellant, applying principles of thermochemistry, nozzle expansion, and structural mechanics.
- Conducted static fire test measuring thrust curve, burn time, and nozzle erosion; applied data reduction techniques to extract specific impulse (Isp) and compare with predictions.

CV Tracking Project
Independent Project August 2025 - September 2025
- Engineered a computer vision system on Raspberry Pi with OpenCV to detect and track a moving ball in real time, transmitting positional data to an Arduino microcontroller for closed-loop control.
- Programmed Arduino firmware to drive servo motors with <0.5 s response time, achieving smooth, accurate actuation based on live camera feedback.
- Designed and fabricated a custom enclosure with sub-millimeter tolerances, combining CAD modeling and hands-on assembly to deliver a durable, professional-grade system.

SKILLS

Software: Solidworks, Ansys, Java, Python, Matlab, NodeJS, HTML, CSS, C#, LaTeX, OpenRocket
Professional Skills: Prompt Engineering, CAD Proficiency, Data Analysis, Design for Manufacturing, Design for Testing

RELEVANT COURSEWORK

Thermodynamics and Fluids, Material Science & Engineering, Differential Equations, Object-Oriented Programming, Aerodynamics, Structural Analysis, Circuits and Electronics, Orbital Mechanics, System Dynamics and Vibrations, Physics I & II, Control Systems