Ethan Heyns

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Education

Georgia Institute of Technology - Class of 2024, Aerospace Engineering, 3.92 GPA

Maynard Jackson High School - Class of 2020, International Baccalaureate Diploma, Valedictorian, STAR Student (Highest SAT), Georgia Scholar, 4.54 GPA

Activities and Experience

Yellow Jacket Space Program, Fall 2020 - Present

Chief Engineer, Summer 2022 - Present

- Student director of YJSP, a liquid-fueled rocket club with the mission to reach space, currently developing a 18ft subscale proof-of-concept vehicle.
- Leading the development of our current mission, overseeing major technical decisions, facilitating best design practices with an emphasis on documentation, and leading system integration.
- Manage club consisting of over 300 members distributed among 5 teams: propulsion, structures, avionics, flight dynamics, and operations.
- Planning launch timeline and logistics by tracking all critical path projects and cross-team dependencies.

Flight Fluids Lead, Spring 2021 - Spring 2022

- Led the flight fluids propulsion team designing, building, testing, and preparing to launch a 18ft tall kerosene and liquid oxygen (LOX) rocket.
- Designed the plumbing and instrumentation for a pressure-fed rocket, including creating the P&ID, speccing components, CADing the fluids and structural interfaces, building MATLAB and Excel fluid flow calculators.
- Plumbed the entire vehicle feed system by bending and flaring tubes.
- Led a rigorous vehicle test campaign by running over 20 water and cryo flows and 2 vehicle static fires. Presented Test Readiness Reviews and made in-depth procedures and failure mode responses.
- Directed the integration process between the fluids system, vehicle structure, avionics, software, and ground support systems.
- Led initial design of space-shot vehicle fluid system. Conducted trade studies on COPVs, regulation methods, and pressurant type.

Ben T. Zinn Combustion Lab, Spring 2022 - Present

Injector Spray Test Rig, Lead Research Engineer, Fall 2022

- Ongoing design, build, and testing of rocket injector spray test rig using advanced diagnostics, such as Schlieren imagery and phase doppler particle analysis, to measure particle size and velocity. Evaluating pintle, impinging, and coaxial swirl injectors and their mixing efficiencies.

RQL Combustor, Research Assistant, Spring 2022

- Assisted graduate students in designing and building a Rich-Quench-Lean (RQL) Combustor to test a jet engine combustion liner's exhaust pollution.
- Designed the plumbing layout in Solidworks. Focused on making it easy to assemble, maintain, and integrate with electronics and other test rigs.

Oxford Study Abroad Program, Summer 2022

- Traveled across Europe to 9 different countries studying Art and Music History, Deformable Bodies, and Legal Aspects of Business.

Georgia Tech Research Institute Internship, Summer 2018

- Developed prototype for motion-activated LED bike safety vest.
- Recognized as the first team to have a working prototype in 7-year history

Honors and Awards

GT Faculty Honors 2020 - 2021

Superintendent Scholar Athlete Award, 2020, Highest GPA of an athlete in Atlanta Public Schools

Senior Science Award, 2020

Senior Voted Most Likely to Solve a Global Problem, 2020

Future Problem Solving Club, 2016
1st place for team action plan on exoskeletons for workforce mentoring

Skills and Interests

- 3D Modeling – Solidworks
- Machining – Lathe, Mill, Waterjet
- Coding – MATLAB
- Fluids Testing – High Pressure, Cryogenics, Combustors
- Plumbing – P&IDs, Fittings, Flaring and Bending Tube
- Team Project Management and Leadership
- Microsoft Office – Excel, Word, PowerPoint, Visio, Teams, Outlook
- Adobe Creative Suite – Premiere, Photoshop, InDesign, Acrobat
- Video Production – Editing, Cinematography
- Drones – Building, FPV Racing
- Brain-Computer Interfaces
- Running, Biking, Rock Climbing