Yunushan Gulsen

Seeking role in Aerospace Engineering

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Education

Rensselaer Polytechnic Institute (RPI), Troy, NY
B.S. Aerospace Engineering
Relevant Courses: Propulsion Systems, Computational Fluid Dynamics, Space Vehicle Design, Engineering Dynamics
Awards: Rensselaer Leadership Award, Rensselaer Medal Scholarship

Security Clearance

Secret — Active

Work Experience

Co-Op Engineer
General Dynamics Electric Boat — March - August 2023

- Conducted stress analysis and material strength evaluations, solving design challenges for submarine components using MathCad, focusing on material resilience.
- Collaborated with multi-disciplinary teams, including fastener, CAD, and mechanical departments, to design and integrate critical components, meeting high-pressure program deadlines.
- Performed iterative design improvements using finite element analysis (FEA) for high-stress mechanical systems.

Undergraduate Research Assistant
Center for Flow Physics and Control (CeFPAC) — October 2021 – May 2022

- Reduced active camber morphing helicopter rotor part count by 50%, optimizing material usage and reducing fabrication complexity through innovative mechanical design.
- Developed new airfoil attachment system, improving stress tolerance and test accuracy, which correlates to fluid system performance in aerospace systems.
- Conducted hands-on prototyping and analysis with Siemens NX, emphasizing fluid flow and structural integrity in wind tunnel tests.

Projects

Capybara Flow Analysis
Spring 2024

- Simulated fluid dynamics using HyperWorks CFD to assess capybara model flow profiles under various environments.
- Focused on aerodynamic properties, identifying key flow effects like vortex formation and pressure distribution.

Capstone Cubesat Propulsion System
Fall 2023

- Designed and analyzed a CubeSat propulsion system, optimizing delta-V and mass efficiency to meet mission constraints.
- Transitioned from cold gas to dual-mode propulsion to improve performance, ensuring reliability.

Solar Sail Trajectories
Spring 2024

- Investigated solar sail dynamics at Lagrange points using MATLAB to identify stable trajectories.
- Proposed control law enhancements for trajectory optimization and improved stability at Lagrange points.

Aerospace Job Scraper
Spring 2024

- Created a Python tool using BeautifulSoup and Selenium for job postings.
- Filtered jobs based on keywords to enhance processing efficiency.

Skills

- Design: Siemens NX, SolidWorks, CAD, Engineering Drawings
- Fabrication: Lathe, Drill Press, Mill, Joining Processes
- OS: Linux (Debian), Windows, MacOS
- Programming Languages: MATLAB, Python
- Additional Skills: FEA, MathCad, Microsoft Office, CFD Software