

Andrew King

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Objective

To contribute to developing innovative aerospace technologies, utilizing my versatile mechanical engineering background.

Summary of Qualifications

- Rocket Club President with over three years of experience in rocket design, assembly, and competition.
- Versed in the simulation of high-powered rockets to accurately predict relevant flight data and in-flight events.
- Extensive participation in professional engineering settings demonstrated via coordination with high-profile clients such as NASA, Raytheon, Boeing, and Wisconsin Space Grant Consortium.
- Recognized for strong teamwork skills, attention to detail, reliability, and dedication.

Education

Bachelor Of Science in Mechanical Engineering

May 2024

Northern Arizona University, Flagstaff, AZ

3.54 GPA | Dean's List | Presidential Scholarship

Engineering Projects

Undergraduate Research Rocket Nozzles (in work)

2023-Current

- Design, manufacture, test, optimize, and compare Bell Nozzle, Aerospike, and Conical Nozzle
- Utilize method of characteristics in MATLAB to plot the diverging area of an axisymmetric nozzle
- Employ computational fluid dynamics (CFD) software, Ansys, to optimize performance and reduce risk of failure

Senior Capstone Project (in work)

2023-Current

- Develop a unique ammonium perchlorate composite propellant (APCP)
- Design and simulate multiple fuel grain geometries to provide an optimized thrust curve for the project's goals
- Create a rocket motor casing that is capable of safely containing the chamber pressures
- Design a load cell test stand to collect trust/performance data from the rocket motor assemblies
- Program a MATLAB script to calculate values relevant to rocket performance

NASA Student Launch Rocket

2022-2023

Invited to compete in the Student Launch Competition upon winning FNL competition.

- As a team, built a rocket with an automated camera system capable of imaging the surrounding launch area
- Designed and tested the GPS/Altimeter avionics subsystem as Avionics Team Lead
- Collaborated with both the Build Team and Capstone Payload Team
- As Rocket Club Treasurer, maintained budget to keep track of funding and all parts purchased

NASA First Nations Launch (FNL) Rockets

2020-2022

Competition hosted by National Aeronautics and Space Administration (NASA) and Wisconsin Space Grant Consortium

- Utilized CAD design and rocket simulation software to increase the reliability of launch vehicle
- Aided in rocket manufacture with 3D printed parts and composite materials
- Presented technical knowledge report to a panel of NASA, Raytheon, Boeing, and WSGC Engineers
- As Lead Safety Officer, responsible for on-pad procedures, including safety inspection and motor priming

Extracurricular Involvement / Achievements

Rocket Club – President (*prior positions Vice President, Treasurer, Safety Lead*)

Fall 2020 – Current

- FNL Competition (3rd place 2021, and 1st place 2022)
- Next Step Award from 2022 competition (Invitation to Student Launch Competition, and team travel award)
- Certified with Tripoli Rocketry Organization, level 2 high-power rocket certification

American Society of Mechanical Engineers (ASME)

Fall 2020 – Current

Technical and Transferable Skills

- High Powered Rocketry
- Microcontrollers (Arduino)
- Simulation (Rocksim, Burnsim)
- Data Analysis
- CFD - Ansys
- Team Leadership
- CAD modeling (Solidworks, Inventor)
- Programming (Matlab, Arduino, HTML)
- Machine Design (Welding, Mill, Lathe)