

MATTHEW K. MACDONALD

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Objective

Extremely driven individual with a strong desire to succeed. Ability to work independently and as part of a team. Curious and self-motivated. Highly analytical with a strong desire to learn. Proven leadership and interpersonal skills.

Experience

MECHANICAL ENGINEERING INTERN | Raytheon – Indianapolis, IN – Summer 2019

Worked for Raytheon, Intelligence, Information, and Services in Indianapolis on a variety of Mechanical Engineering Design projects. Worked closely with company leadership on programs built for a variety of different aerospace environments.

- Created original interconnect designs and prototyped models for structural and geometric requirements.
- Designed detailed technical drawings for complex assembly models to government and industry requirements and standards.
- Performed structural and thermal margin of safety calculations on internal radar components designed for flight conditions.
- Created full drawing tree structures for complete programs. Gained project management skills mapping program structure.
- Traveled to New Mexico and performed field maintenance on company hardware.

VANDERBILT AEROSPACE DESIGN LAB (VADL) | Vanderbilt University – August 2018 to Present

- Use Creo, Matlab, and machining skills to design, build, and test a medium altitude rocket in our participation in the NASA Student Launch Competition.
- Co-author a PDR, CDR, and FRR regarding vehicle and payload design requirements and progress.
- Lead presentations to fifteen undergraduate/graduate students on project technical and deadline updates.

UNDERGRADUATE RESEARCHER | Vanderbilt University – Summer 2018

One of thirty students selected by faculty to participate on a research team that studied the development and optimization of solid-state electrolytes for use in safer, more reliable Lithium Ion batteries.

- Researched and tested methodologies to optimize performance and mechanical properties of the electrolyte.
- Conducted and analyzed Atomic Force Microscopy on the electrolyte.
- Presented research at Vanderbilt Undergraduate Research Fair to faculty and peers.

Education

BACHELOR IN MECHANICAL ENGINEERING | Computer Science Minor – Vanderbilt University – 2016 to Present (Senior)

GPA: 3.74/4.00

- Completed coursework includes: Thermodynamics, System Dynamics, Statics, Advanced Physics, Fluid Mechanics, and Machining.
- Computing courses include Java, C++, Matlab, and Data Structures.

Leadership

Vanderbilt Tour Guide

Selected from over 700 students to give tours and provide information to prospective students and parents. Requires extensive public speaking.

President – Sigma Nu Fraternity

Run Executive Board operations, including holding weekly meetings, managing a variety of different roles, and working with members and the University.

Co-Founder, Vanderbilt Library Committee

Founded and participate in meetings for the Vanderbilt Library Committee. Student liaison for the library system.

Skills

- Creo 3D Modelling software
- MathCAD
- C++/Java
- Machining
- ANSYS FEA Software
- Project Management
- Microsoft Office
- Public Speaking