Mikela M. Petersen

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# Summary of Qualifications

Detailed-oriented mechanical engineering student passionate about operations research, system modeling and simulation.

# Skills & Abilities

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| --- | --- | --- |
| * System Modeling and Analysis
* Aerodynamic Performance Simulation
* Interdisciplinary Team Experience
 | * Applied Finite Difference
* Material Stress Analysis
* Numerical Computing and Optimization
 | * Integration, Instrumentation and Test
* Statistical and Data Analysis
* MATLAB, SolidWorks, LabView
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# Engineering Experience

## Turbomachinery design project January 2021-Present

* Led an aerodynamic team that modeled, designed, and manufactured experimental wind turbine blade prototypes.
* Created and executed multi parameter rotor simulations.
* Performed blade design and optimization, including 3D visualization using airfoils.
* Conducted data extrapolation of XFOIL data to 360 Angle of attack.
* Defined turbine system losses for rotor blades, controls, and generator.
* Derived computations for rotor performance over tip speed ratio range.
* Leveraged integrated cross product team models and tools that included MATLAB, SolidWorks, Q-Blade, and OnShape.
* Operated in a diverse team environment with subject matter experts in order to conduct engineering analysis on different parts of the wind turbine.
* Utilized the University Fabrication Shop to manufacture several components of the wind turbine.

## NAU NASA SPace grant internship  august 2021-present

* Aided in the research and development of Magnetic Shape Memory Alloy composite actuators.
* Led the manufacturing and testing of the MSMA composite samples.
* Conducted research on the advancements of MPIC and MSMA actuators
* Collaborated in a diverse team environment to mathematically compute and validate temperature distribution.

## Student Research | NAU Green fund  May 2021 – december 2021

* Managed an energy audit of critical infrastructure power systems.
* Employed analysis, in field instrumentation, and data collection to verify and validate that power systems satisfy program requirements.
* Performed an analysis of power requirements to optimize output across multiple domains.
* Conducted multiple trade studies for competing power configurations.
* Collaborated with multiple subject matter experts in a diverse team environment in order to converge on practices that will lessen the amount of energy used in critical assets.

# Education

## BACHELOR OF SCIENCE | northern arizona university Anticipated May 2022

* Mechanical Engineering GPA 3.45