Sean McGee

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Education

Northern Arizona University, Bachelor of Science in Mechanical Engineering

- ➢ Minor in Electrical Engineering
- ➢ Graduated: December 2021
- ➢ Cumulative GPA: 3.12/4.00
- ➢ Dean's List: Fall 2020, Spring 2021

Experience

Project Manager, General Atomics EMS Satellite Test Fixture Capstone Project

- ➢ Designed, manufactured, and assembled test fixture for 3/6/12U CubeSats on spherical air bearing with adjustments for range of satellite CG locations
- ➢ Evaluated various system and subsystem design concepts using requirements matrix, FMEA, and PDR/CDR with client
- ➢ Generated parametric CAD models for system components, optimizing based on hand calculations, FEA results, and manufacturability; updated models based on feedback from assembly and integration
- ➢ Formulated motor control system using Simulink, validated using Simscape multibody dynamics simulations, implemented using Raspberry Pi and Arduino Mega
- ➢ Designed test bearing and satellite to verify performance requirements through multiple testing procedures
- ➢ Presented completed design to client, including demonstration verifying expected performance

Experimental Methods Project

- ➢ Installed thermocouples along various surfaces of heat sink, measured temperatures at steady-state conditions using NI LabVIEW and NI-9213 temperature input module
- ➢ Simulated experimental conditions using ANSYS and MATLAB PDE Toolbox, producing results within ±5°C of experimental results
- ➢ Summary of experimental procedures, results, and conclusions delivered via presentation and report

Skills

Programming:	C/C++, MATLAB, Python, Processing, JavaScript
Simulation:	SOLIDWORKS, ANSYS, Simulink, Simscape
Control systems:	Root locus, PID controllers, state space representation, LQR/LQE
Data analysis:	NI LabVIEW, MATLAB, Excel, R
Electronics:	Arduino, ESP8266/ESP32, Raspberry Pi, FPGAs