# Kathle Tischner

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## SUMMARY

Mechanical engineer with a focus in aerodynamic modeling, dynamic systems, and data-driven system identification. Experienced in using FlightStream for aerodynamic database creation and analysis, comparing aerodynamic models derived from low and mid fidelity aerodynamic tools. Practiced at developing automated analysis pipelines in Python, with hands-on hardware integration experience.

## EDUCATION

**Master of Science** | *Mechanical Engineering*                                    **Expected December 2025**
Utah State University, Logan, Utah                                                                GPA: 3.77
**Bachelor of Science** | *Mechanical Engineering*                                                 May 2024
Utah State University, Logan, Utah                                                                GPA: 3.85

## PUBLICATIONS

- Tischner, K. (2026). "Aerodynamic Parameter Estimation For A Scaled F-16: A Simulation-Based Sensitivity Analysis" AIAA Science and Technology Forum and Exposition (SciTech), Orlando, FL, January 2026. (Accepted).

## TECHNICAL SKILLS

- **Languages:** Python (NumPy, SciPy, Matplotlib), MATLAB, C/C++ (for Arduino/Teensy), FORTRAN
- **Software:** SolidWorks, FlightStream, LaTeX, Microsoft Office Suite
- **Analysis:** Polynomial Fitting, System Dynamics, Data Analysis, System Identification
- **Hardware & Mechatronics:** Teensy & Arduino Microcontrollers, Data Acquisition, System Integration, Sensor Selection, Servo Control

## WORK EXPERIENCE

**Graduate Student Researcher** | *Utah State University AeroLab*                          Jan 2023 – Present
- Supported the design, integration, and deployment of a modular, Teensy-based data acquisition system, supporting the project from component selection through to successful field testing.
- Performed system identification on complex dynamic systems using a custom polynomial fitting code in Python to analyze test data, characterize system behavior, and validate predictive models.
- Developed automated data processing workflows using Python and FlightStream scripting to create aerodynamic databases and extract and analyze key aerodynamic coefficients.

**Graduate Teaching Assistant** | *Utah State University*                               Aug 2024 – May 2025
- Served as a teaching assistant for undergraduate Heat Transfer and Advanced Dynamics courses, mentoring over 100 students to enhance their understanding of core engineering principles.
- Led supplemental instruction and review sessions weekly, focused on materials to clarify complex topics in thermodynamics.

**Undergraduate Student Researcher** | *Brigham Young University*                        May 2022 – Aug 2022
- Designed and fabricated robust electrical mounting systems for applications including an autonomous wheelchair and an underwater robot. Utilized 3d printers, and metal lathes to develop the mounting systems.

## ACADEMIC PROJECTS

**Numerical Modeling & GUI Development** | *Python*                                              Fall 2023
- Developed physics-based numerical models to predict system behavior using measured data from onboard sensors.
- Engineered custom Python GUIs for real-time plotting of live data streams and for post-processing of large datasets, creating valuable tools for system monitoring and analysis.

**Embedded Mechatronic System** | *Arduino/C++*                                               Spring 2024
- Developed and programmed a Teensy microcontroller to manage multiple I/O tasks simultaneously, including data logging, sensor interfacing, and actuator control.

## AWARDS/CERTIFICATIONS

- **Fundamentals of Engineering (FE) Mechanical** – NCEES (August 2023)
- **Engineering Undergraduate Research Scholar (EURS)** – USU (January 2023)
- **Eagle Scout** – Boy Scouts of America (May 2017)