Falak Mandali

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EDUCATION:

PURDUE UNIVERSITY, West Lafayette, Indiana ***August 2020 – December 2024***

- **Major:** Aeronautical and Astronautical Engineering (AAE) **Current GPA:** *3.96/4.00*
- **Relevant Courses:** Optimal Control, Linear Systems, Avionics, Flight Dynamics & Control, Digital Systems

WORK EXPERIENCE:

MAGLEV AERO Inc., Boston, Massachusetts

- **Aeromechanical Engineering Intern** ***January 2023 – August 2023***
  - Assisted in the formulation of the dynamics and simulation of an eVTOL in MATLAB.
  - Established connection between MATLAB and AWS to improve optimization computation time.
  - Conducted scalability analysis of propulsion system to understand its performance with size.
  - Performed testing for the state estimation system for a propellor to tune the Kalman filter.
  - Provided wiring, manufacturing and build support to assemble and prepare test stands.

RESEARCH EXPERIENCE:

FLIGHT DYNAMICS AND CONTROLS LABORATORY, Purdue University**,** West Lafayette, Indiana

- **Undergraduate Research Assistant** ***January 2024 – present***
  - Creating a vehicle model using data-driving modelling techniques and optimizing its path while considering vehicle and physical constraints.

JAIN RESEARCH LABORATORY, Purdue University**,** West Lafayette, Indiana

- **Undergraduate Research Assistant** ***September 2022 – December 2022***
- **Summer Undergraduate Research Fellow (SURF)** ***May 2022 – August 2022***
  - Optimized the design of the controller and thermal energy storage (TES) device of a thermal management system in a control co-design (CCD) approach.
  - Proved that CCD strategy results in more robust TES designs as compared to the conventional sequential design process.

PUBLICATIONS:

F. Mandali, M. Shanks and N. Jain, "Control Co-Design of a Thermal Management System with Integrated Latent Thermal Energy Storage and a Logic-based Controller," 2023 22nd IEEE ITherm, Orlando, FL, USA, 2023, pp. 1-10, doi: 10.1109/ITherm55368.2023.10177617.

HONORS & AWARDS:

- **ITherm 2023 Best Poster Award** in the System Level Thermal Management Track by IEEE.
- **Outstanding Second-Year Student Award 2022** by AAE.
- **Outstanding First-Year Student,** & **Community Engagement Award Spring 2021** by Engineering Projects in Community Service (EPICS) for my work as a Project Manager of three teams.

SKILLS:

Excel	MATLAB	Simulink	C	AWS EC2
LaTex	CNC Machining	Microcontroller programming	Github	CAD & CAM