Muneebullah Nawaz
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Education

The Ohio State University (OSU)| |Columbus, OH, United States *August 2023 – Present*
Master of Science in Mechanical Engineering, **GPA 3.94, Graduate Research Assistant**
Advisor: Dr. Shawn Midlam-Mohler
Projects:

- Simulation-Driven Design Optimization and Automation for Cordwood-Fueled Room Heaters (SPRING' 24- Present)
- Capstone Project – CFD of battery pack for thermal loads analysis
- Control-oriented Thermal Load Characterization Model for the Electric School Bus

King Abdullah University of Sciences and Technology (KAUST)| |Thuwal, Saudi Arabia *Jan 2021 – Aug 2023*
Master of Science in Mechanical Engineering, **GPA 3.75, KAUST Fellowship**
Thesis: Vertical Wind Tunnel Design via Integrated Numerical and Statistical Modeling (*Data-Driven Modeling and Computational Fluid Dynamics)*

National University of Sciences and Technology (NUST)| Islamabad, Pakistan *September 2013 – September 2017*
Bachelor of Engineering in Aerospace, **GPA 3.85**, **President's Gold Medal for 1st position in the batch**
Thesis: Conceptual Design and Mockup development of a Hexagonal Micro-Satellite *(System Design)*

Skills

Software: MATLAB, Simulink, Python, C++, OpenVSP**,** Catia, SolidWorks, Ansys (Mechanical, Fluent), LabVIEW
Hardware: Wind Tunnel Testing and Aerodynamic Experimentation**,** Structural Impact Testing
Professional Competencies: Leadership, Project Management, and Team Coordination, Technical Writing: Design Proposals, Reports, and Presentations
Languages: Urdu (Native), English (Advanced)

Professional Research Experience (4 years)

Turkish Aerospace Industries (TAI) *Feb 2022 – Jun 2022*
Aero-elasticity and Dynamics Load Engineer *(Aeroelasticity and Dynamic Load Analysis)*

- Contributed to the development of a hybrid model for Continuous Turbulence Load Analysis, gaining hands-on experience with aircraft aero-elastic behavior.
- Assisted in the analysis of aero-elastic behavior of aircraft components under various load conditions.
- Engaged in initial stages of compliance with FAA certification requirements for proposed aircraft design.

Aviation Research Indigenization and Development *October 2017 – May 2021*
Team Lead – Aircraft Design Optimization and Integration Group *(Simulation System Modeling and Design Optimization)*

- Developed a modeling and simulation environment for aircraft conceptual design, reducing design evaluation time by 75%.
- Led the development of a novel stochastic optimization algorithm, successfully applied in real-world scenarios.
- Automated the design process for aircraft modeling, improving efficiency and accuracy in design evaluations.

Projects and Publications

Papers:

Published:

- **Analysis of the Vortex-Induced Vibrations on Chimney and Effect of Variable Stiffness Guy Cable Vortex-Induced Vibrations on the Chimney Wake Region under Different Forcing Functions to Reduce the Vibrations of Chimney**
- **Determination of Directional Stability using Torsional Pendulum Concept for Preliminary Design of Aerospace Vehicles**
- **A control-oriented thermal load characterization model for the e-school bus: Auxiliary Load Analysis (SAE Technical Paper)**