Seth Pietrowski

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WORK EXPERIENCE

Certification Engineer I **06/2024 – Present**

Safran Group, Aircraft Seats Division Gainesville, TX

- In charge of certification efforts for multiple seat programs, qualifying per government and manufacturer (i.e. Boeing, Airbus) safety regulations and customer (i.e. Delta, Emirates) preferences
- Preparing technical reports for submittal to FAA, airplane manufacturers, and customers demonstrating static, dynamic, and chemical compliance and orchestrating test procedures per advisory circular 14CFR 25.562, aerospace standards, and aerospace recommended practices
- Representing certification team to verify static, dynamic, cycle, and abuse tests, and assisted with test setup

Undergraduate _Research_ Assistant **01/2022 – 05/2024**

UCF Structural Dynamics Lab, Dr. Jeffrey Kauffman Orlando, FL

- First author and presenter at 2023 SPIE Smart Structures Conference for piezoelectric-based vibrating valve
- First author and leader of project investigating the capability of metal wire meshes for damping of high-bandwidth vibrations that develop in turbomachinery, such as around rotor blades and turbine shafts
- Utilized physical data and software-based design to analyze structures' vibration characteristics
- Collected data using various instruments and analyzing in LabVIEW, MATLAB and ANSYS FEA and CFD
- Worked with graduates and industry on ONR-funded project to create piezoelectric-driven oscillating valve

Electrical Engineering Intern **05/2023 – 08/2023**

Eastern Shipbuilding Group Panama City, FL

- Analyzed voltage drop from ship electrical generators to all electrical components, accounting for resistance losses of power and lighting wires for single- and three-phase loads according to MIL-HDBK-299
- Generated electrical diagrams used by production team in placing electrical wiring on Coast Guard OPC vessels
- Used AutoCAD, Excel, and Siemens FORAN suite of software to 3D model, route cables, modify equipment, generate reports, and analyze power draw for electronics according to military and commercial specifications

EDUCATION

University of Central Florida, *3.73 GPA* **05/2024**

Bachelor of Science, Aerospace Engineering Orlando, FL

- **Relevant Courses:** Vibrations & Controls, Rocket Propulsions, Aerodynamics, Flight Mechanics, Mechatronics

PROJECTS

Senior Design Project – Aerodynamics Leader **08/2023 – 05/2024**

University of Central Florida Orlando, FL

- Developed, manufactured, tested rocket to reach apogee of 2200 ft with active guidance back to launch site
- Set physical restraints for all payload systems based on required apogee and available motors; designed all aerodynamic components; performed CFD for critical components; assured quality of component systems

Supersonic Engine Ground Test Station **08/2023-11/2023**

University of Central Florida Orlando, FL

- Simulated Mach 5 high altitude flow at ground conditions for scramjet engine with temperature and pressure analysis across engine, creation of piping and instrumentation diagram, and mixture ratio adjustment for efficient combustion without exceeding thermal limits of test housing in the nozzle region

PUBLICATIONS

Seth P. Pietrowski, Bryce Villanueva, & Jeffrey L. Kauffman, "Experimental Investigation of Randomly Oriented Wire Mesh Damper Performance." Proceedings of the ASME Turbo Expo 2024: Turbomachinery Technical Conference and Exposition. Volume 10B: Structures and Dynamics — Fatigue, Fracture, and Life Prediction; Probabilistic Methods; Rotordynamics; Structural Mechanics and Vibration, V10BT27A012 (28 August 2024); https://doi.org/10.1115/GT2024-124095

Sydney A. Giannuzzi, Tate Myers, **Seth Pietrowski**, and Jeffrey L. Kauffman, "Limitations of Piezoelectric-Based Valve Actuators." AIAA SCITECH 2024 Forum, AIAA 2024-0258 (4 January 2024); https://doi.org/10.2514/6.2024-0258

Sydney A. Giannuzzi, Andres M. Rodriguez, **Seth P. Pietrowski**, Jeffrey L. Kauffman, "Piezoelectric ring-stack actuator design for high-frequency valve," Proc. SPIE 12483, Active and Passive Smart Structures and Integrated Systems XVII, 124830I (28 April 2023); https://doi.org/10.1117/12.2658565

Seth P. Pietrowski, Andres M. Rodriguez, Carlos Hernandez, Jeffrey L. Kauffman, "Piezoelectric ring-stack actuator characterization and modeling for high-bandwidth application," Proc. SPIE 12484, Behavior and Mechanics of Multifunctional Materials XVII, 1248408 (18 April 2023); https://doi.org/10.1117/12.2658625

SKILLS

- Certified in Autodesk Inventor, Microsoft Excel
- Proficient in ANSYS, SolidWorks, AutoCAD, Python, MATLAB, LABVIEW, Navisworks, OnShape, C
- Miscellaneous: Language learning, Coding, Problem solving, Teamwork, Communication, Project Management