Maria Rozman

124 Deepwood Drive, Pine Grove Mills, PA 16868-0662 ● (860)786-2283 ● mmr6318@psu.edu ●
https://www.linkedin.com/in/maria-rozman

EDUCATION:

Pennsylvania State University, University Park, PA, USA August 2020 – Present
PhD in Mechanical Engineering, GPA: 3.97/4.00

University of Connecticut, Storrs, CT, USA, December 2018
Bachelor of Science in Engineering
Major: Mechanical Engineering, Major GPA: 3.87/4.00, Magna Cum Laude
Bachelor of Arts
Major: German, Major GPA: 3.82/4.00, Magna Cum Laude
Cumulative GPA: 3.81/4.00

Ruprecht-Karls Universität Heidelberg, Heidelberg, Baden-Württemberg ,Germany, September 2016-August 2017
Eurotech Student Exchange Program Abroad Year
Major: Germanistik im Kulturvergleich

CONFERENCE PUBLICATIONS:

Rozman, M., Berdanier, R. A., Barringer, M. D., Thole, K. A., 2023, "Strategies for High-Accuracy Measurements of Stage
　　Efficiency for a Cooled Turbine", ASME Paper GT2023-100642, In Review

Rozman, M., DeShong, E. T., Thole, K. A., Berdanier, R. A., Robak, C., 2022, "Characterizing Flow Instabilities During Transient
　　Events in the Turbine Rim Seal Cavity", ASME Paper GT2022-82664

JOURNAL PUBLICATIONS:

Rozman, M., DeShong, E. T., Thole, K. A., Berdanier, R. A., Robak, C., 2023, "Characterizing Flow Instabilities During Transient
　　Events in the Turbine Rim Seal Cavity", J. Turbomach, vol. 145(3), pp. 031014.

RESEARCH EXPERIENCE:

Pennsylvania State University, University Park, PA, USA
Graduate Research Assistant, Steady Thermal Aero Research Turbine (START) Lab, July 2020 – Present
Advisor: Dr. Karen A. Thole, Dr. Reid A. Berdanier
- Conducted a CFD study of air flow through cooling structures of a blade trailing edge.
- Manufactured and tested a rig to measure the flow parameter through engine airfoils over a range of pressure ratio.
- Quantified the roughness on additively manufactured turbine components using optical profilometry
- Characterized instability flow structures in the rim seal cavity of a single stage turbine during transient processes.
- Conducted a statistical analysis of efficiency data from an engine representative turbine rig to determine optimal sample sizes and instrumentation implementation.

University of Connecticut, Storrs, CT, USA
Senior Design Project, Professor's Award, September 2017 – May 2018
Advisor: Dr. Xinyu Zhao
Sponsor: Pratt & Whitney
- Designed, manufactured, and tested a desktop spin rig and utilized IR technology to measure temperature gradients across the surface of a rotating disk with the goal of calculating heat transfer coefficients.

TEACHING EXPERIENCE:

University of Connecticut, Storrs, CT, USA
Undergraduate Teaching Assistant, Applied Mechanics II: Dynamics, Civil Engineering Department, January-May 2016
- Graded weekly homework assignments.
- Ran pre-midterm review sessions to practice solving problems and for students to ask questions.
- Proctored exams and assisted students with appropriate answers during the test.

INDUSTRY EXPERIENCE:

Pratt & Whitney, East Hartford, CT, USA
Intern, Turbine Aerodynamics, Aerothermal Fluids, May-August 2022
- Validated turbine meanline and CFD stage efficiency prediction tools using experimental data from a single stage turbine test rig at the START lab at PSU.

Belcan, LLC, Windsor, CT, USA
Aerospace Systems Engineer, Diagnostic and Prognostic Health Maintenance Group, February 2019 – June 2020
- Supported requirements, design, development, and testing of health monitoring algorithms using physics-based or data-driven methods that help in detection and interpretation of changes in the behavior of aircraft engines systems.
- Analyzed large sets of data from different sources.
- Performed the validation and verification of customer requirements per ARP4754 industry standards.
- Ran tests to ensure the integrated functionality and performance of the aircraft's environmental control and wing anti-ice systems.

Pratt & Whitney, Middletown, CT, USA
Intern, Advanced Measurement Operations, Systems Engineering and Validation, May-August 2018
- Programmed a stand-alone dedicated MATLAB GUI for a Campbell Diagram Interrogator, which compiled and analyzed large sets of data, whose output was a list of drivers of interest.
- Conducted a clearance measurement feasibility study for an eddy current probe to measure pinion gear oscillations.
- Assisted in the investigation of the root cause of a NSMS probe failure.
- Ran routine maintenance checks on laser equipment.

MTU Aero Engines, Munich, Germany
Student Worker, Metallography and Process Engineering, March-July 2017
- Cleaned and prepared samples for scanning electron microscope analysis
- Utilized IMS and AxioVision software for quantitative image analysis of materials
- Conducted hardness testing on a variety of embedded samples of failed gas turbine engine components
- Translating technical documents from German to English

University of Connecticut, Storrs, CT, USA
Machinist Assistant, Technical Services Center, June-September 2016
- Completed service requests sent from various departments by operating machining tools such as mills and lathes.

SKILLS:

Programming Tools: MATLAB, Labview, Simulink, GUIDE, Python, Jupyter Notebook
Computer Aided Design: SolidWorks, Siemens NX
Simulation: ANSYS Fluent, UTCFD, Siemens STAR-CCM+
Office Software: MS Word, MS Excel, MS Outlook, PowerPoint
Operating Systems: Windows, Linux
Machining: Metal Shear, Drill Press, Engine Lathe, 2 axis and 3 axis Milling Machines (CNC and hand operated), Zeiss Microscopes
Thermal Imaging: FLIR Systems
Languages: German, Russian

HONORS:

Babbidge Scholar, University of Connecticut, 2016
New England Scholar, University of Connecticut, 2015-2019
Dean's List, College of Liberal Arts and Sciences, School of Engineering, University of Connecticut, 2013-2019
Senior Design Professor's Award, University of Connecticut, 2018