

Ryan Van Domelen

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Education

Pennsylvania State University, State College, PA *August 2023 to Present*
Doctor of Philosophy in Mechanical Engineering

Pennsylvania State University, State College, PA *August 2023 to Present*
Master of Science in Mechanical Engineering

University of St. Thomas, St. Paul, MN *2022*
Bachelor of Science in Mechanical Engineering (Graduated Summa Cum Laude), GPA: **3.97**

Conference Presentations

- **Van Domelen, R.**, Wentz, J., Shepard, T., 2023 "Impact of Channel Shape and Process Parameters on Fluid Flow in Internal Channels of Material Extrusion Parts," ASME IMECE, IMECE2023-114000
- **Van Domelen, R.**, Le, D., Bromen, A., Hawley, S., Wentz, J., 2023 "Tunable Stiffness in Material Extrusion of Thermoplastic Urethane," ASME MSEC, MSEC2023-101823

Patents

- U.S. Provisional Patent Application No. 63/455,217 – "Sealed Elongate Assembly", filed March 28, 2023

Work Experience

Graduate Research Assistant, Pennsylvania State University, State College, PA *August 2023 to Present*
• Working in the Steady Thermal Aero Research Turbine (START) Laboratory under Dr. Karen Thole

Associate Mechanical Design Engineer, Banner Engineering, Plymouth, MN *June 2021 to May 2023*
• Worked in the new product division – measurement systems as a discipline lead on a harsh environments radar sensor
• Designing, prototyping, testing, and developing mechanical features for manufacturing
• Interfacing with suppliers through GD&T tolerancing and DFM processes to ensure the die casted, sheet metal, injection molded, overmolded, machined, extruded (polymer and metal), or stamped parts I've designed meet drawing specifications
• Designed and tested parts that met IP 65, IP 67, and IP 69k testing standards
• Working closely with manufacturing to develop assembly plans, fixtures, and processes (ultrasonic welding, automated laser welding, heat staking, adhesives)

Teaching Assistant – Thermodynamics, University of St. Thomas, St. Paul, MN *August 2022 to December 2022*
• Assisting students in coursework by hosting office hours, diligently responding to emails, and prepping personal notes on course material
• Regularly and effectively collaborate with the professor to ensure students are meeting class requirements and handled assignment grading

Engineering Research Assistant, University of St. Thomas, St. Paul, MN *December 2020 to December 2022*
• Lead the full-factorial DOE approach to investigating pressure drops in turbulent flow through additively manufactured pipes
• Stiffness modeling in fused filament fabrication (FFF) of thermoplastic urethane utilizing a design of experiments approach. A statistical regression model was then created to predict rigidity in TPU parts manufactured through FFF

Certificates

- Certificate of Completion – NASA Proposal Writing and Evaluation Experience (NPWEE)
- SolidWorks: Associate of Mechanical Design (Certificate ID: C-9JZSPRQB53)
- Certificate of Proficiency – Welding Technology Basic Processes
- American Welding Society, Level 1 – Entry Welder

Skills

- Programs: Creo, Solidworks, ANSYS (FEA & CFD), MoldFlow, MATLAB, MiniTab, Microsoft Office
- Fabrication: Mill, lathe, drill press, TIG welding (steel, aluminum, and stainless), stick welding, MIG welding, plasma cutting, oxy-fuel cutting, carbon arc cutting