GRACE KASCAK

Mechanical Engineering

(203) 556-5703 | gelizabethk23@gmail.com | Alexandria, VA | www.linkedin.com/in/gracekascak

PROFESSIONAL SUMMARY

Early-career mechanical engineer with strong analytical, experimental testing, and modeling experience, motivated by efficient and environmentally responsible engineering practices. Skilled in data-driven validation, uncertainty analysis, and mechanical testing. Interested in roles supporting sustainable systems, resilient infrastructure, and resource-efficient design.

EDUCATION

B.S. Mechanical Engineering | Sustainability Studies Minor | Rensselaer Polytechnic Institute – Troy, NY 2022 – 2026

TECHNICAL SKILLS

MATLAB/Simulink – Data Analysis, Control Systems
Siemens NX – Modeling, Drawings, FEA Simulations
Python – Numerical Methods
Machine Shop Literacy – Instron Testing, Milling, Welding, Sand Blasting, Glass & Laser Cutting
LTSpice | TortoiseSVN | Microsoft Office

PROJECTS & EXPERIENCE

ANALYSIS OF GASKET AGING | Experimental Validation & Data Analysis Engineer 2025

Designed and implemented a repeatable experimental validation system to support calibration of a finite-element simulation predicting gasket joint opening forces in aged aluminum assemblies

- Conducted mechanical pull testing using Instron system, accounting for geometry constraints, adhesion behavior, and thermal aging effects
- Identified and reduced major sources of test variability through fixture redesign and standardized procedures, improving repeatability and confidence in results
- Developed MATLAB scripts to analyze test data and quantify correlation error between simulation and physical measurements
- Reduced destructive retesting and material waste by improving simulation-to-test correlation reliability
- Documented methods and findings for sponsor review, design reporting, and future work

ACCESSIBLE SNOW SHOVEL DESIGN | Project Lead 2024

Led engineering design of an ergonomically optimized snow removal tool to reduce injury risk and improve accessibility

- Coordinated task planning, subsystem integration, and progress reporting
- Applied user-centered and constraint-driven design principles to concept selection
- Developed CAD iterations and evaluated load and usability tradeoffs

LEADERSHIP & SERVICE

ENGINEERS WITHOUT BORDERS | RPI Chapter 2023 - 2025

- Supported preliminary technical planning and sustainability assessment for community solar installation project in Panama
- Collaborated with interdisciplinary teams and external partners on sustainability-focused engineering efforts

DAYCARE COUNSELOR | Oak Street Elementary 2024

- Maintained structured learning environments and led STEM-oriented activities for elementary students
- Strengthened communication, responsibility, and adaptability skills

HONORS

Rensselaer Leadership Award | Women's Leadership Scholarship