Jacob A Tuck

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Visit my portfolio for detailed information on my projects:
https://tuckja5.wixsite.com/jacob-tuck-portfolio

Objective: Seeking an internship or co-op experience in the fields of Mechanical Engineering and Engineering Design

Education:

Bachelor of Science, Mechanical Engineering and Engineering Design — **May 2027**
Rose-Hulman Institute of Technology, Terre Haute, IN — GPA: 3.76
Related Courses: Mechatronic Systems, Mechanical Systems, Mechanics of Materials, Materials Engineering, Product Design Studio

Masters of Engineering Management — **May 2027**
Rose-Hulman Institute of Technology, Terre Haute, IN
Related Courses: Risk Analysis & Management, Multi-Objective Optimization, Leadership & Global Challenges, Project Management

Skills:

- Proficient in SolidWorks, AutoCAD, Java, Python, MATLAB, C++
- Over 100 hours of machine shop experience, including manual and CNC machinery, welding, and woodworking
- Problem-Solving and Conflict Resolution
- Rapid Prototyping
- Verbal and written professional communication

Work History:

Willoughby Industries – Indianapolis, IN — **Summer 2025**
Engineering Intern

- Analyzed manufacturing techniques to design 28 unique fixtures for processing parts
- Created parts for the manufacturing fixtures using manual machining techniques
- Designed parts and subassemblies for prototyping new products
- Assisted in developing a 3D-printing area in the facility for prototyping and showcase models

Activities:

Rose-Hulman Robotics Team

- Workspace Manager for all robotics teams
  - Elected to oversee the robotics workspace, ensuring it remains a safe and productive space through 5S principles
- Combat Robotics member
  - Design robots for high-intensity applications
  - Rapid prototyping of parts utilizing 3D-printing
  - Compare and utilize many materials to balance weight, durability, and stiffness

Alpha Phi Omega Service Fraternity – Tau Lambda Chapter

- Serve the community via group service events and individual volunteer work
- On the service committee where I help organize service events

Projects:

Mix 'n Match Rosie – *Lovable plush elephant that helps kids learn clothing functions*

- **Communicated effectively with stakeholders to deliver a product that met all the market needs**
- **Applied ASTM standards and testing protocols to ensure the safety of the product**

SpeedBump – *1 lb. combat robot focused on durability*

- **Implemented iterative design to continually test and improve the robot**

Digi-Die – *Physical die that broadcasts roll data to a connected device via Bluetooth*

- **Programmed IoT protocols into the device for wireless use**
- **Packaged electronics into a small form factor using off-the-shelf electrical components**
- **Simulated physical model to maintain a fair roll, and tested the prototype to confirm model**

Sunflower – *Portable solar generator that maximizes efficiency by tracking the sun's position*

- **Utilized rapid prototyping strategies to design a wiring harness that can be placed in multiple prototype phases with minimal disassembly**
- **Implemented feedback control to reduce the computational complexity**
  - **Performed user testing to get design feedback from end-users**

References available upon request