James K. Metz

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Vanderbilt Engineering graduate with natural leadership abilities. Logical, detailed, and growth oriented mindset, with a knack for delivering comprehensive and data-driven solutions to complex engineering, design, and innovation challenges.

EXPERIENCE

Wil-Ro, Inc. **Nashville, TN**
Lead Manufacturing Engineer *June 2023 - Present*

- Lead Wil-Ro's engineering department by implementing long- and short-range engineering objectives, overseeing one other engineer and factory technicians, and providing technical solutions and measurable results towards leadership-wide goals.
- Developed over 10 comprehensive manuals documenting standard fabrication and operational procedures to streamline fabrication processes, improve repetitive accuracy, enhance quality, and minimize opportunities for product defects.
- **(CSWA**) Created SOLIDWORKS renderings for over 10 truck bodies, and developed technical drawings and shop instructions to include bill of materials, weld, hole tap, and sheet metal bend callouts, plasma table, and press brake specifications.
- Re-designed, launched, developed standard manufacturing instructions, and created technical drawings and files for 2 products that were previously discontinued for 6+ years.
- Designed new storage compartment latching systems for our utility flatbed product line, increasing compartment security.
- Promoted and engaged in cross-functional collaboration with the sales team and material vendors to incorporate consumer feedback and top-tier industry technology into innovation and design objectives..
- Collaborated with Supply Chain and Operations Leaders to create and implement factory floor plans and lean methodologies including moving heavy machinery and material storage racking, establishing material handling processes, and optimizing manufacturing work flows to minimize labor, time, and material waste.
- Communicated and collaborated with contractors to pour concrete pads to extend material storage area, maintain maintenance of forklifts, air compressors, plasma tables and other heavy machinery, and ensured compliance with federal and state regulations on runoff rainwater contamination and air pollution emissions.

Merge Medical Device Studio **Nashville, TN**
Engineering Intern (30+ hrs/wk). *June 2021 – August 2021*

- Developed and 3D printed CAD models for injection molding on project providing first functioning prototype.
- Rendered CAD models and drawings for rib fixation device to communicate part specifications to manufacturers.
- Conducted baseline research on FDA regulations and 510k pathways for class II rib fixation device to launch R&D process.
- Co-developed and assembled bench tests using Arduino to measure light reflection for urinary drainage bag prototype.

Army Reserves Officer Training Corp **Nashville, TN**
Cadet Battalion Logistics, Sustainment, and Transportation Officer (15+ hrs/wk.) *May 2022 – May 2023*

- Developed long-range planning and coordination for food, water, training equipment, hygiene, and sustainment products for 4 day long joint field training in remote environments.
- Managed and maintained Army ROTC supply inventories for training equipment, uniforms, OCIE, and TA-50 items.
- Officer in charge and point of contact for weapons and ammunition control, regulation, and safety for joint training exercises, including ensuring proper handling and safety during transportation and weapons accountability during range training.

KEY SKILLS

- Manufacturing and Design Engineering
- Python (Numpy, Pandas, Seaborn)
- **CAD (Certified SolidWorks Associate in Mechanical Design – C-VWS982X3FM)**
- MATLAB R2023a
- 3D Printing, Slic3r, g-code
- Vanderbilt BSL-2 Lab Work, Cell Culturing
- CNC Machining, DXF Files, Press Brakes
- Microsoft Word, Excel, and PowerPoint
- HTML
- Teamwork and Collaboration
- Time Management and Professionalism

EDUCATION

Vanderbilt University **Nashville, TN**
Bachelors of Engineering in Biomedical Engineering ***Graduation:*** *May 12, 2023*

- **Cumulative GPA**: 3.3 | **SAT**: 1540 | **Dean's List - Fall 2022**

ACTIVITIES & AWARDS

- Undergraduate Research Assistant — July 2021 – May 2022
- Resident Advisor — August 2021 – May 2023
- Theta Tau Engineering Fraternity, Iota Delta Chapter — January 2020 – Present
- Department of TN Veterans of Foreign Wars Leadership Award — April 2023
- Simply Sickle: A Point of Care Test for Diagnosis and Management of Sickle Cell Disease — August 2022 – April 2023