Youssef Mostafa

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EDUCATION

Cleveland State University Cleveland, OH

Washkewicz College of Engineering

Master of Mechanical Engineering, Expected May 2025 08/2024 – 05/2025

Concentration in Modeling, Simulation, and Analysis in Robotics and Sustainable Energy Systems

- GPA: 3.8 / 4.0
- Relevant Coursework: Numerical Methods in MCE, Finite Element Analysis, Production Planning and Control, Modeling and Simulation, Sustainable Energy Solutions.

Bachelor of Science in Mechanical Engineering 08/2020 - 05/2024

Minors: Mathematics, Middle Eastern Studies

- GPA: 3.5 / 4.0
- Jack, Joseph & Morton Mandel Honors College Full Scholar
- Relevant Coursework: Differential Equations, Linear Algebra, Calculus, Engineering Ethics, Engineering Design, MATLAB, Computer Aided Engineering, Materials and Manufacturing Processes, Statics, Dynamics, Strength of Materials, Engineering Economy, Fluid Mechanics, Thermodynamics, Machine Analysis, Vibrations, Linear Control Systems, Measurements

PROFESSIONAL EXPERIENCE

Vikings Forge Corp. Streetsboro, OH 05/2025 – Current

Automation Engineer – Full Time

- Designed robotic forging production lines in SolidWorks, optimizing robot placement, material flow, and system efficiency.
- Led mechanical design projects across 8 production lines, advancing the company's transition towards full automation.
- Researched, designed, and prototyped robotic grippers and adaptive fingers for pick-and-place and transfer robots—iterating from 3D-printed prototypes to CNC-machined assemblies capable of handling a variety of 10 to 80 lbs forged parts.
- Performed FEA and thermal simulations in SolidWorks and ANSYS to redesign cooling air manifolds, extending die life by 20% and reducing energy waste by 15%, and reducing die manufacturing costs by $80,000.
- Used 3D scanning to analyze and improve legacy manifold systems for better airflow and manufacturability.
- Implemented preventive maintenance schedules for CONDAT lubrication units to optimize graphite ratios and reduce line downtime.

Jergens, Inc. Cleveland, OH 09/2024 – 12/2024

Quality Mechanical Engineer Intern

- Calibrated and programmed 50+ advanced precision measurement devices to automate small-part inspections.
- Enabled rapid, semi-automatic micrometer-accurate measurements, enhancing SOP efficiency and productivity.

Alloy Engineering, Berea, OH 05/2024 – 08/2024

Mechanical Design Engineer Intern

- Used SolidWorks to develop and repurpose 17 parts and assemblies, optimizing old designs to reduce material waste and saving ~$350,000 in parts and materials.
- Independently designed and supervised manufacturing of 2 custom pressure vessel components valued at ~$320,000.
- Coordinated with machinists on precision CNC drawings and reverse-engineered components to facilitate optimal performance and Lean practices.

Tempest, Inc. Lakewood, OH 12/2023 – 04/2024

Sales Engineer Intern

- Developed and optimized 20+ P&IDs using AutoCAD, reducing both labor costs and engineering time by ~20%.
- Responsible for saving $200,000+ in multiple BOMs through vendor negotiation and dual-ended lead time expedition.

ADDITIONAL SKILLS AND INTERESTS:

Languages: English (fluent/native), Arabic (fluent/native), German (proficient)
Technical: Thermal Fluid Systems and Finite Element Analysis, Lathe and Milling machining, ASME Drafting
Software: SOLIDWORKS, Autodesk Inventor, AutoCAD, MATLAB, Ansys, Microsoft Office Suite (Word, PowerPoint, Teams, Excel)
Projects: Vertical access wind turbine for electric vehicle charging stations, independent electric motorcycle design and assembly.
Research: Biomechanical properties and relations, wind and solar hybrid systems, electric motorcycle safety research, and enhancements.
Additional interests: Fine and performing arts, athletics, neuroscience, artificial intelligence, robotics, and ethnomusicology.