Aras Ozdemir

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EDUCATION

Cornell University Expected **May 2026**
Master of Engineering in Mechanical Engineering
Relevant courses: Systems Engineering & Six Sigma (Black Belt), Innovation and Design of Biomedical Technologies

Pennsylvania State University **May 2024**
Bachelor of Science in Biomedical Engineering and Mechanical Engineering **3.55 GPA**
Relevant Completed courses: Engineering Design, Fluid Mechanics, Thermodynamics, Mechanical Design, Numerical Simulations, Vibration of Mechanicals Systems, Dynamics, Circuit Design

ENGINEERING EXPERIENCE

Quality Engineering intern, Fresenius Kabi, *Frankfurt, Hesse* **November 2024 – July 2025**
- Administer extensive testing of medical devices in a laboratory environment according to ISO and DIN norms
- Worked alongside the FDA to perform guideline testing and create documentation for the US Market
- Overlook complex 3D models, and fabricate technical drawings for the FDA
- Update preexisting technical drawings and ensure they adhere to FDA regulations
- Construct automated testing devices made out of steel and polymer to ensure testing with the least amount of variables
- Assisted cross-functional teams in product development, ensuring alignment with quality, safety, and regulatory requirements
- Applied engineering problem-solving to optimize test procedures, increasing efficiency and accuracy in validation processes.

Research Assistant, The Pennsylvania State University, *State College, PA* **January 2023 - January 2024**
- Conducted extensive research on antibiotic properties of Bacteriophages
- Utilized advanced microscopy techniques to conduct detailed and comprehensive examinations of the interaction between bacteriophage and bacteria's through high-resolution photography
- Developed a user-friendly MATLAB application with a graphical user interface (GUI), streamlining data analysis through automation.
- Confidently implemented multiple advanced filtering methods with precision and expertise to effectively minimize data noise, resulting in the generation of visually clear and informative graphs that enhanced data presentation and interpretation.

PROJECTS

ASML Engineering Project, *Ithaca, NY* **August 2025 – May 2026**
- Design and implement electrical and mechanical infrastructure to support donated robotic handling arm operation.
- Develop and integrate a control network to maneuver the robotic arm, focusing on system reliability and precision.
- Conduct risk assessments to evaluate the robotic arm's capabilities, limitations, and safety considerations.
- Establish comprehensive safety guidelines and operational protocols for Robotic Arm.
- Build sensors and other electronics to increase safety of the robotic arms trajectory.

B. Braun CAPSTONE, *State College, PA* **January 2024 - May 2024**
- Analyzed issues with a secondary Connector unclamping during medical procedures
- Developed and testing of multiple prototypes to enhance grip strength and reliability, using CAD and advanced lab equipment.
-Achieved a final design that improved connector security and met sponsor expectations, influencing future medical standards.
- Ensured that design and testing adhered to stringent ethical and regulatory standards, preparing the prototype for FDA review and approval.

Exhibition for The Discovery Space Museum, *State College, Pa* **August 2023 – December 2023**
- Designed an interactive exhibition tailored to captivate young minds, fostering their curiosity and passion for science.
- Ensured all mechanical elements are safe to use and meet the highest standards of reliability and durability.

Numerical Simulation Project, *State College, Pa* **January 2023 – May 2023**
- Undertaken the intricate challenge of designing stents with complex geometries, such as an eclipse cross-sectional shape
- Utilized COMSOL Multiphysics to perform simulations on the stents, analyzing their mechanical behavior & fluid dynamics
- Created accurate simulations of geometries to accurately predict fluid flow and its stress impact on the stent.

SKILLS

Technical Skills: MATLAB, R, Python, COMSOL Multiphysics, SolidWorks, MS Office, LaTeX
Management Skills: FDA Regulation Knowledge, ISO Standard knowledge, Verification, Validation, Design Control Processes, Risk Management, Decision-Making, Data Analysis, Cross-Cultural Competence
Languages: English *(Native)*, German *(Native)*, Turkish *(Intermediate)*, Spanish *(Intermediate)*