

Ermia E. Melika

Mechanical Engineer

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OBJECTIVE

Highly motivated and organized leader seeking an entry level Mechanical Engineering position. Contributing previous work experience, developed skills such as time management, collaboration, and strategic thinking, to improve product design and quality.

KEY SKILLS

Adobe Photoshop | Adobe Illustrator | Corel Draw | Java Programming | Python Programming | MatLab | SolidWorks | Fusion 360 | Creo Parametric | Simplify 3D | Ultimaker Cura | Manufacturing Operations & Processes | Interpret CAD Drawings | Abaqus

EDUCATION

B.S. in Mechanical Engineering

September 2019 - May 2023

NJIT - Newark College of Engineering

Newark, NJ

- **GPA:** 3.6/4.0 | **Dean's list** for 6 semesters
- **Relevant Coursework:**

Engineering Materials and Processes | Engineering Mechanics | Differential Equations | Kinematics of Machinery | Dynamics | Strength of Materials | Introduction to System Dynamics | Thermodynamics I & II | Stress Analysis | Fluid Mechanics | Introduction to CAD | Heat Transfer | Mechanical Lab | Mechanical System Design

INTERNSHIPS

Mechanical Systems Engineering

January 2022 - July 2022

Schindler Research & Development

Randolph, NJ

- **Prototyped** elevator doors, cars, as well as various elevator mechanisms and systems for testing purposes
- **Developed new methods** of securing different components of an elevator to ensure safe installation and safe use
- **Calculated maximum stresses, fatigue life, failure rate, and ventilation requirements** for different parts and systems of an elevator in order to maintain the requirements asked by the American Society of Mechanical Engineers
- **Utilized PTC Creo to simulate applied forces** on certain parts of the elevator to calculate the deflection, and using the results to create a solution to minimize deflection
- **Wrote documentation** with the equations needed to calculate the forces acting on different components of the elevator while maintaining the American Society of Mechanical Engineers' requirement

WORK EXPERIENCE

Scientific Advisor

December 2020 - Present

WEI & Sleman

Freehold, NJ

- Researched and evaluated multiple intellectual properties and **ensured the clients' claim is plausible and scientifically accurate**
- **Drafted and created patents based on clients' designs and ideas** as well as **sketched various blueprints** pertaining to clients embodiment
- **Advised and lead attorney** on whether or not they should proceed with clients' idea based on prior research
- **Filed over four hundred Power of Attorney applications** efficiently and swiftly in order to transfer clients from one attorney office to another

Student Staff

January 2021 - Present

NJIT Makerspace

Newark, NJ

- Trained in **Waterjet Cutting, Basic HAAS CNC, CNC Laser Cutting/Engraving, 3D Printing**
- **Operate, and assisted staff use only machines** to accommodate student projects
- **Facilitated training sessions** for Makerspace, 3D printing, and Laser Safety and usage to students, faculty, and staff members
- **Created and fulfilled quotes** in reference to waterjet cutting, 3D printing, and laser cutting
- **Performed maintenance and repairs** on Waterjet, HAAS CNC, CNC Lasers, 3D printers and other electronic equipment
- **Hosted Makerspace tours, and competitions** and assisted students/faculty with questions

PROJECTS

CNC Machining

- Designed tensile bars using Autodesk Fusion 360's CAD and CAM software to set up tool paths, as well as feeds and speeds, for CNC machines
- Sketched designs for a custom lip strike and utilized the CNC waterjet to cut stainless steel to desired dimensions
- Operated CNC router machines to create specific drawer pockets for metrology equipment

3D Printing

- 3D Modeled functional items such as rotating phone stand, and switch panel cover using Ultimaker Creo and Solidworks
- Used Ultimaker Cura and Simplify3D to slice models and adjust settings for different types of filaments
- Adjusted and created G-code to improve the fabrication process

Research

Cell Mechanics and Mechanobiology of Skin Grafting

- Utilized Abaqus to alter and simulate the mechanical properties of the skin's extracellular environment by adjusting a wide range of their biological functions such as migration, proliferation, differentiation, and gene transcription
- Understood and learned how cells sense the changes in the mechanical properties of their environment which requires an accurate measurement of these properties
- Studied different methods of measuring extracellular signals including extracellular matrix stiffness and extracellular forces.