Dishita Gandhi

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SUMMARY

Biomedical Engineer with experience in mechanical design, electrical systems and data analysis. Proficient in 3D printing, Prototyping and software tools like SolidWorks, MATLAB and AUTOCAD, with a strong foundation in mechanics, instrumentation and medical imaging. Focused on applying engineering principles to create impactful, real- world solutions.

EDUCATION

B.S. ,Biomedical Engineering | The University of Toledo | Toledo, Ohio August 2023-December 2025
Coursework: Engineering Statistics, Quality Control, Biomechanics, Electronics, etc. **GPA:3.38**
Transferred from Thapar Institute of Engineering and Technology, India

ENGINEERING EXPERIENCE

Laser Development Intern | First Solar | Perrysburg, Ohio
Optimized Laser Tool Performance for Solar Panels August 2024- December 2024

- Maintained and optimized laser tool health by performing camera calibration, tool leveling, gripper alignment, vibration analysis, and scribing head adjustments to ensure precise laser placement on solar panels.
- Conducted laser specific evaluations with tools like MicroVu and Keyence for metrology verification by understanding various parameters of each laser process, ensuring laser placement and alignment on the panel.
- Analyzed the tool data using JMP, identifying areas for optimization and assisted in implementing the data driven improvements within the Laser tool. Overall contributed to improve the laser precision, tool efficiency and process reliability from 54% to 89% ensuring high-quality solar panel production.

Project Assistant | The University of Toledo | Toledo, Ohio
Engineered a Portable Microscope using 3D Printing and Microscopy May 2024-August 2024

- Engineered a lightweight and durable protective enclosure for a portable microscope, achieving an optimal design that ensured proper illumination angles, which enhanced fluorescence usability for 10+ researches. Faced Challenges in material selection for durability, lightweight design, and optimal light transmission.
- Developed 3D model using AutoCAD, fabricated the enclosure with PRUSA MK4 3D printer, and selected PLA/ABS filaments for structural integrity. Designed specialized housing for optical components by understanding optics, imaging and phase contrast microscopy.
- Performed optical integration, alignment verification, and functional testing to ensure reliable fluorescence and bright-field imaging performance, iteratively refining the enclosure based on usability feedback and experimental results to enhance stability, assembly efficiency, and readiness for continued research validation.

3D Printing Intern | Thapar University | India
Fabricating of Scaffolds using 3D Printing May 2023- August 2023

- Fabricated 3D-printed scaffolds to study spinal biomechanics, addressing instability and slipped discs.
- Modelled spinal and rib structures using AutoCAD and SolidWorks, selecting PCL for biocompatibility.
- Explored FDM and SLA printing for optimal scaffold formation and spinal injury treatment.

ACADEMIC PROJECTS

Posture Pal January 2025- December 2025

- Built a wearable biomedical device to measure neck posture in real time using inertial sensors, implementing vibration-based haptic feedback to correct poor posture, improve ergonomic awareness, and promote healthy postural behavior through continuous monitoring and threshold-based (15 degree) alerts.

Biosense August 2022-December 2022

- Developed a non-contact biomedical sensing system to estimate stress and fatigue by extracting physiological signals from video data, applying signal processing and data analysis techniques to quantify subtle variations associated with cardiovascular and respiratory activity.

CardiaPatch August 2022- December 2022

- Drafted a compact Arduino Nano based prototype integrating MAX30102 sensor (SpO2 and pulse monitor) and glucometer sensor to measure blood oxygen and glucose levels.
- Designed for real-time health monitoring, especially for diabetes and respiratory patients, with 20% improved accuracy over existing devices.

SKILLS

- **Software & Tools:** SolidWorks, AutoCAD, Minitab, MATLAB, JMP , LabVIEW, Multisim, Altium
- **Hardware & Instrumentation:** PRUSA MK4 Printer, Arduino, MicroVu, Keyence, Oscilloscope
- **Programming Languages:** Java, Python, R, C, HTML
- **Domain Knowledge:** Device Prototyping, Biomechanics, Singal Processing, Quality Analysis

CERTIFICATION

- ISO 13485:2016 – Medical Device Quality Management Systems (Awareness Level)
- FDA 21 CFR Part 820 – Quality System Regulation (QSR)
- Six Sigma White Belt
- Basic Life Support (BLS) Certification