Sakshi Shah

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PROFESSIONAL EXPERIENCE

Research Assistant Jan 2025 – present | Raleigh, United States
Neuromuscular Controls and Rehabilitation Lab, North Carolina State University
- **Designing linkages** in **SOLIDWORKS** to incorporate lateral movement capability in a wearable exoskeleton.
- Prototyping and 3D printed parts using **Ultimaker**.
- Selected and **integrated motors** for smooth and precise actuation.

Process Development Intern May 2024 – Aug 2024
Tioga Cardiovascular Los Gatos, United States
- Supported **process development** and R&D in optimizing the **Luna TMVR** product's manufacturing process.
- Designed **SLA**-printed **fixtures** in **SolidWorks** and **Preform** to enhance vibration damping and test the delivery system.
- Refined **engineering drawings for GD&T,** managed **approval requests** for **controlled documents,** and ensured quality checks for injection-molded components, improving precision and reducing defects.

Associate Engineer Aug 2021 – Jun 2023 | Pune, India
Eaton
- Managed **250** customer orders and optimized the **Engineering-to-Order (ETO)** process, increasing efficiency by **34%** by using **CI** and **automation** tools (Certified in DMAIC Six Sigma).
- Supported the plant by executing Engineering Change Requests **(ECRs)** and **Sustaining Engineering projects** for the regulators team, standardizing processes, reducing labor hours, and reducing part variations by **96%** through Part Drawing revisions, Bill of Materials (**BOM**) standardization in SAP PLM, and documentation.
- Reduced costs through Design for Assembly **(DFA)** and Value Analysis/Value Engineering (**VAVE**) projects worth **$100k**.

Research Engineer (Co-op) Sep 2020 – Apr 2021 | Pune, India
Bamboochi Bicycles
- Defined chassis design parameters and used **MATLAB** to model the drivetrain, evaluate stability, and analyze control responsiveness.
- Conceptualized the frame design**, rendered** and **analyzed** the frame in **SOLIDWORKS, Fusion 360** and **ANSYS Mechanical** respectively, achieving a **Fork flop of 150.43 N/rad and an Operational speed range of 2-12 m/s at 50 RPM.**

PROJECTS

Visual Servo Control Using a 7-Link Kinova Gen 3 Robot Arm Jan 2025 – present
- Developed a **closed-loop control** system to track dynamic objects in **real-time** using an **eye-in-hand** camera, leveraging **MATLAB**, **Simulink**, **ROS**, and **OpenCV**.
- **Designed** and **fabricated** custom **End-of-Arm Tooling (EOAT)** in SolidWorks to stabilize the ultrasound probe and support a monocular camera.

System Integration and Control of an Autonomous Conveyor System Sep 2024 – Dec 2024
- Developed a **Flask/PostgreSQL web application** enabling remote access via **Modbus TCP/IP** and **MQTT,** for a **Micro800 PLC**-based color sorting system.
- **Integrated sensors and actuators**, reducing manual intervention by 50%.

2-Pole Electro-Permanent Magnet Clamp for Workpiece Holding Sep 2024 – Nov 2024
- **Optimized** the design of an Electro-Permanent Magnetic Clamp using Magnetic Circuit Analysis (MCA) and Finite Element Method Magnetics (FEMM), **achieving a vertical reluctance force of 1460.1 lbf.**
- **Validated** FEMM data through 3D analysis in Ansys Electronics Desktop, **ensuring accurate force calculations and identifying potential saturation effects within the EPMC design.**

EDUCATION

Master of Science in Mechanical Engineering Aug 2023 – May 2025
North Carolina State University || CGPA 4/4 Raleigh, United States
Vibrations, Design of Electromechanical Systems, Industrial Automation, Engineering Design Optimization

Bachelor of Technology (B.Tech.) in Mechanical Engineering Aug 2017 – Jun 2021
MKSSS's Cummins College of Engineering for Women || CGPA 8.5/10 Pune, Maharashtra, India
Relevant Courses: Engineering Mathematics, Rigid Body Dynamics, Automation and Control Engineering,Avionics

SOFTWARE SKILLS

Modelling
SOLIDWORKS | AutoCAD | Autodesk Inventor | ANSYS Mechanical

Planning and Manufacturing
SAP PLM | Excel VBA | Power Apps | PreForm | UltiMaker Cura

Programming
MATLAB | Simulink | Python | Connected Components Workbench | ROS | PostgreSQL