Sai Saran Grandhe

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EDUCATION

Stanford University Stanford, CA
*Master of Science in Mechanical Engineering (**Design Methodology and Product Realization**)* *April, 2026*
Coursework: Global Design Thinking, Multimaterial Additive Manufacturing, Coaching High Performance Teams

Indian Institute of Technology Kharagpur Kharagpur, India
*Bachelor of Technology in Mechanical Engineering (**Micro: AI and ML**) - Department Rank 1* *May, 2024*
Coursework: Fundamentals of Electronic Packaging, Non Traditional Manufacturing Processes, Data Driven Methods

ENGINEERING AND DESIGN EXPERIENCE

Green Coffee Bean Hardness Analyzer Fixture [Our Product] Stanford, USA
Engineering Design Analytics for Product Realization (Dr. Jonathan Edelmann) *Sep 2024 - Ongoing*
- Designing a fixture using **vacuum granular jamming** to secure 20 coffee beans for Shore D hardness testing
- Conducting **Customer Value Chain Analysis** to identify key needs in coffee roasting process to improve product
- Utilizing **design leverage points** in developing the product focussing on critical aspects for better coffee roasting

Mechanical Engineering Intern Bengaluru, India
Venwiz, Engineering Consultancy *May 2024 - Aug 2024*
- Developed a data extraction tool for **engineering drawings** using Image Processing, to **save time by 95%**
- Assessed and compared **vendor** quotations, researched manufacturing, cost, market for **client** requirements

Traverse Compliant Stage for Automated Microscopy [Report] Kharagpur, India
Bachelor Thesis Project, Mechanical Engineering Dept *Aug 2023 - Apr 2024*
- Designed and prototyped an XY traverse stage using CAD with **FEA simulation**, achieving a **2:1 input-output ratio**
- Integrated **motorized actuation** using Arduino control, enabling automated specimen positioning for microscopy

Designing of Low-Cost Flowmeter for Subsurface Fluxes | Research Internship [Report] Rennes, France
Observatorie des Sciences de l'Univers de Rennes *May 2023 - Aug 2023*
- Designed a **flowmeter** by integrating **Mechatronics** and **Thermal Methods** with **cost reduction of 90%**
- Engineered an experimental setup simulating flow conditions, **enhancing** product testing and **reliability**
- Validated the precision through **COMSOL** simulation and MATLAB Analysis, improving product practicality

3-DoF Robot Arm [Video] Kharagpur, India
Bio Robotics Research Group, IIT Kharagpur *Jun 2022 - Aug 2022*
- Developed a high-reduction ratio (17:1) **eccentric cycloidal actuator** for robot joints, with **6 Nm output Torque**
- Implemented **PID Control** and obtained fast angular position seeking response, robust to disturbances

LEADERSHIP

Hardware Modelling - Self Powered Smart Shoes, Interhall Competition [Report] Kharagpur, India
Captain *Feb 2024 - Apr 2024*
- Led a team of 10 to design shoes using **piezoelectric plates** and energy harvester, converting walking into power
- Oversaw **project planning** and integrated accelerometers and GSM for **fall detection**, achieving a **third position**

Mechanical Engineering Society, Mekanika Kharagpur, India
Coordinator *Sep 2023 - May 2024*
- Led a **20-member team** with a **$5,000 budget** to boost **student engagement** through academic and career events
- Launched blog and **'Alum Talks' series**, connecting students with opportunities and fostering alumni collaboration

SKILLS & INTERESTS

- Technical Skills: FEA, **CAD** (SolidWorks, Fusion 360), **CFD**, Mechatronics, **Manufacturing Workshop**
- Projects: **Stanford Solar Car Project** - Mechanical and Battery Subteam, Manufactured **Paper Bike** - ME310A