

TANISH SANDEEP GUJARATHI

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SUMMARY

Mechanical Engineering student with a strong interest in Industrial Engineering, Industry 4.0, and AI-driven manufacturing systems. Experienced in CAD/CAE tools and hands-on projects in Additive & Digital Manufacturing, with a focus on practical implementation. Strong in analytical thinking, problem-solving, and communication, enabling effective collaboration in multidisciplinary environments.

WORK EXPERIENCE

Research Intern,
IIT Bombay

June 2025 - July 2025

- Designed a wire straightening mechanism (Fusion 360) to improve feed stability in WL-DED
- Contributed to a robotic WL-DED setup using a KUKA arm and YLS-3000 laser system
- Integrated sensor-based feedback and micro-actuation for real-time force control
- Reviewed research literature to address deposition quality and process optimization

Industrial Trainee,
Autofina Robotics

Feb 2025 - March 2025

- Completed hands-on training in robot programming and automation using the TAL Brabo industrial robot
- Executed applications like pick-and-place, vision-based sorting, and pneumatic gripping
- Gained experience in teach pendant operation, I/O mapping, sensor integration, and safety protocols
- Worked with pneumatic systems and basic microcontrollers (Arduino, Raspberry Pi) in industrial setups

Industrial Trainee,

Jan 2026 - Jan 2026

Daikin Japanese Institute of Manufacturing Excellence

- Studied HVAC fundamentals, including components and industrial applications
- Gained exposure through an industrial visit to a Daikin manufacturing facility
- Learned Kaizen, 5S, PDCA, and Six Sigma for quality and continuous improvement
- Developed understanding of structured manufacturing workflows and industry practices

Head of PR & Sponsorship,
Google Developer Groups

Nov 2023 - April 2026

I've led speaker outreach, partnerships, & on-ground execution for major club initiatives. I've invited & coordinated with multiple guest speakers, played a key role in organizing events like Design Decode by bringing in the CEO of Chlorosynth, & secured collaborations & sponsorships with organizations such as Atencion Media & IMFS (study abroad & master's counselling). Alongside PR and partnerships, I've also hosted and anchored several club events, working closely with teams to ensure strong engagement and smooth execution.

General Secretary,

Jan 2026 - Current

American Society of Mechanical Engineers (ASME)

Working on multiple research papers for the ASME conference. Leading and guiding the team for the mechanical related workshops, projects, etc.

EDUCATION

B.Tech Mechanical Engineering

2023 - 2027

MIT World Peace University

- CGPA: 8.53
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PROJECTS

AI-Driven Quality Control

- Developed a computer vision-based defect detection system using Python and OpenCV
- Designed a conveyor-based inspection system with automated rejection
- Implemented real-time defect detection and classification
- Working on a research paper on the same topic

AI-Driven Predictive Maintenance

- Researched AI/ML-based predictive maintenance for industrial systems
- Awarded Gold Medal at Indian Institute of Industrial Engineering (IIIE) for industrial relevance and analytical depth
- Analyzed failure prediction, condition monitoring, and maintenance optimization
- Explored digital twins, sensor analytics, and Industry 4.0 integration

Additive and Digital Manufacturing

- Researched a precision wire straightening mechanism for WLDED at IIT Bombay, focusing on robotic additive manufacturing.
 - Designed CAD models in Fusion 360, integrating lead-screw actuation and force-sensing concepts.
 - Conducted literature review on wire feed precision, deposition quality, and process optimization in WLDED.
 - Designed and fabricated PLA-based 3D printed prototypes for engineering applications.
 - Developed the CAD model of a biometric attendance system enclosure following DfAM principles.
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TECHNICAL SKILLS

1. Fusion 360
2. Research Analysis
3. Industrial Robotics & Automation
4. Leadership, Teamwork, Collaboration
5. Industrial AI - ML
6. Additive & Digital Manufacturing
7. Python language - Matplotlib and SciPy Libraries
8. C language