TANUJA MALLICK

AI Engineer & Web Developer

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Portfolio

Professional Summary

Innovative **Robotics and AI Engineer** with a strong foundation in Autonomous System, Generative AI and Full-Stack Development. Proven track record in architecting AI-driven prescription tools and specializing in **E-commerce**. Expert in **Python, ROS, Java, Computer Vision**.

Education

- **Priyadarshini College of Engineering, Nagpur, B. Tech – Robotics and AI** **2021-2025**
  GPA: 8.2/10, Ranked **2nd** in course **(Top 1%)**

Work Experience

Robotics Engineer, Voyage Robotics – Nagpur **Oct'24 – Present**

- **Individually spearheaded t**he development of a Generative AI ecosystem using **Stable Diffusion**, reducing visual asset prototyping time by **40%** and enabling the synthesis of 1,000+ high-fidelity images per month.
- **Architected and deployed** an end-to-end perception pipeline using **Salesforce BLIP**, increasing image captioning accuracy by **25%** and automating descriptive metadata generation for large-scale autonomous datasets.
- **Engineered ROS-based automation frameworks** that integrated real-time AI workflows into robotic hardware, resulting in a **15% reduction in system latency** during interactive real-world applications.
- **Led the technical transition** to Gradio-based interactive interfaces, improving internal stakeholder testing efficiency by **30%** through streamlined model validation.

Product Executive Intern, Voyage Robotics – Nagpur **Feb'24 – May'25**

- **Revamped robotics manufacturing processes** by identifying bottlenecks in the production lifecycle, leading to a **20% increase in overall team productivity** across key automation projects.
- **Developed a centralized data-driven reporting system** for the robotics team, reducing manual data collection time by **15 hours per week** and accelerating project decision-making cycles.
- **Strategized and implemented** automation tools for ongoing R&D projects, achieving a **10% improvement in operational efficiency** through the integration of Python-based scripting

Projects

Zomical.com | Lead Full-Stack Engineer

• Launched a live platform showcasing integrated AI solutions, increasing digital visibility by 100%.
• Optimized frontend rendering with React.js, ensuring sub-second page load times.
• Implemented high-performance UI components using React.js, ensuring sub-second page loads and mobile responsiveness.

AI Art Generator | Lead Developer

• Architected a Generative AI pipeline reducing prototyping cycles by 40% via text-to-image synthesis.
• Deployed an interactive Gradio interface, enhancing model validation efficiency by 50%.
• Used Python, Hugging Face and Stable Diffusion for text to image and image to text project

YummyCart (Full-Stack E-Commerce) | Full-Stack Developer

• Developed an ecosystem using Firebase for real-time processing, achieving a 99.9% data consistency
• Revamped checkout flows with React, reducing cart abandonment by an estimated 15%
• Developed a full-stack food ordering platform with real-time cart updates and secure order, processing via Firebase integration.

Skills

- **Tools & Languages:** Python (Expert), C/C++, Java, Advanced SQL (PostgreSQL), JavaScript (ES6+), React.js, Node.js, FastAPI, ROS (Robot Operating System), Git, Docker, GCP, Firebase.
- **Specialties:** Robotics & AI, Autonomous Systems, Generative AI, Computer Vision, Machine Learning, Predictive Modeling, Data Visualization, Full-Stack Development, API Design, Automation, System Optimization, Root Cause Analysis (RCA).
- **Datasets:** Autonomous Navigation Data, Image/Perception Datasets, E-commerce Transactional Data, Sensor Telemetry, Clickstream, Real-time Menu/Order Data.
- **Course Work:** Robotics and AI, Generative AI (Stable Diffusion/BLIP), Machine Learning, Data Structures & Algorithms (DSA), Object-Oriented Programming

Key Achievements

- Recognized as "**Top Technical Contributor**" for the launch of Zomical.com, a live engineering ecosystem providing documentation and AI solutions.
- **Distinguished as "Lead Robotics Mentor"** for internal training sessions for junior engineers on **ROS (Robot Operating System).**