Tushar Banga

Software Engineer ◇ Full-Stack Development ◇ AI/ML ◇ Computer Vision

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SUMMARY

Computer Engineering student with hands-on experience in Software Engineering, AI/ML, and Full-Stack Development. Proficient in Python, C++, TypeScript, React.js, Node.js, Express.js, FastAPI, and modern AI frameworks. Built scalable web applications, REST APIs, Computer Vision systems, and LLM-powered solutions through internships and academic projects. Passionate about developing production-ready software and solving real-world engineering challenges.

EDUCATION

B.Tech. Computer Engineering **2023-2027**

J.C. Bose University of Science and Technology, YMCA, Faridabad CGPA: 8.797/10

TECHNICAL SKILLS

Languages: Python, C++, TypeScript, JavaScript, SQL
Backend: Node.js, Express.js, Flask, FastAPI, REST APIs, Socket.IO
Frontend: React.js, HTML5, CSS3, Tailwind CSS, Vite, Recharts
AI/ML: Machine Learning, Deep Learning, Computer Vision, NLP, LLMs, YOLOv8, OpenCV, Scikit-learn
Databases: MySQL, Firebase Firestore
Cloud & DevOps: Docker, GitHub Actions, Vercel, Render
Tools: Git, GitHub, Firebase, JWT, Cloudinary, Leaflet, Third-party APIs
Core CS: Data Structures & Algorithms, OOPs, DBMS, Operating Systems, Computer Networks

EXPERIENCE

Vision AI Intern | VaultStack AI **July 2026 – Present**

Computer Vision & AI Engineering

- Engineered a multilingual OCR solution for government document digitization, enabling accurate text recognition across 12 Indian languages.
- Built scalable preprocessing and OCR pipelines using Python, OpenCV, and deep learning to process scanned government records.
- Fine-tuned multilingual OCR models on annotated datasets, improving recognition across Indian scripts.
- Enhanced OCR reliability for degraded documents through image preprocessing and optimization.

Full Stack Development Intern | Ideal Medical Solutions **January 2025 – February 2025**

Billing Management System

- Engineered a GST-compliant billing system with invoice generation, transaction tracking, and financial reporting.
- Integrated Firebase Firestore to enable secure, real-time data persistence and synchronization.
- Built reusable billing modules that streamlined invoice workflows and reduced operational complexity.
- Contributed to feature implementation, testing, and deployment, ensuring reliable production-ready releases.

PROJECTS

AutiScan – AI-Powered Autism Detection & Therapy Platform GitHub — Live

Python, YOLOv8, OpenCV, LLaMA 3, Flask, React.js, Firebase

- Developed an AI-powered Autism Spectrum Disorder (ASD) platform for behavioral assessment and therapy support.
- Built real-time behavioral analysis pipelines using YOLOv8, OpenCV, and facial landmark detection.
- Applied LLaMA 3 to generate personalized therapy recommendations and AI-assisted guidance.
- Architected a scalable full-stack application using Flask, React.js, and Firebase.

SafeHer AI – AI-Powered Women Safety Platform GitHub — Live

React.js, TypeScript, Express.js, Firebase, Socket.IO, Leaflet, JWT

- Built an AI-powered women safety platform with SOS alerts, live tracking, guardian monitoring, evidence vault, fake calls, and AI assistance.
- Built secure backend services using Express.js, MongoDB, Firebase Authentication,and Role-Based Access Control.
- Integrated Socket.IO, Leaflet, and Cloudinary for real-time communication, maps, and media management.
- Strengthened platform reliability through scalable backend architecture, security middleware, rate limiting, and responsive React dashboards.

IPO Sense AI – AI-Powered IPO Analytics Platform GitHub — Live

React.js, TypeScript, Express.js, Firebase, Groq API, Recharts

- Built an AI-powered investment analytics platform for IPO tracking, portfolio management, and market intelligence.
- Unified live market data, IPO filings, financial news, and Groq-powered insights into a single analytics platform.
- Developed interactive dashboards for portfolio analytics, watchlists, stock insights, and data visualization using Recharts.
- Built secure backend services with Express.js, Firebase Authentication, REST APIs, and automated data pipelines.

NavAssist – Smart Navigation Assistant for Visually Impaired Users GitHub — Live

Python, Flask, Firebase, Web Speech API

- Built a real-time voice navigation assistant for visually impaired users powered by speech recognition and machine learning.
- Developed secure REST APIs using Flask and Firebase Authentication for authentication and real-time communication.
- Combined speech recognition, intent detection, and voice-guided navigation into a unified accessible platform.
- Architected a scalable backend to deliver reliable and accessible user experiences.

Additional Projects (AI, Computer Vision & Full Stack): **github.com/tusharbanga**

LEADERSHIP & POSITIONS OF RESPONSIBILITY

Senior Coordinator | University Computer Centre & Digital Affairs **Jul 2025 – Present**

- Oversaw university-wide digital infrastructure, software deployments, and technical operations.
- Drove technical initiatives to improve operational efficiency and student-facing digital services.

Class Representative **Aug 2023 – Present**

- Represented the class in academic and administrative coordination with faculty and university departments.
- Coordinated class activities, communicated student concerns, and facilitated smooth academic operations.

Member & Youth Red Cross **Oct 2023 – Sep 2025**

- Contributed to community outreach initiatives through awareness campaigns and volunteer activities.
- Participated in health, social welfare, and blood donation drives to support community engagement.