Shreerama Shiva Sai Bharadwaja

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Summary

Full-Stack AI Engineer experienced in developing intelligent automation systems, multi-agent architectures, and AI-driven SaaS applications. Skilled in deploying LLM-based tools, integrating RAG pipelines, and building scalable GenAI platforms that combine WebSocket-based real-time systems and Voice Agents (VAPI) with production-ready full-stack infrastructure.

Core Skills

Frontend Engineering: React (18 / 19), Next.js (App Router), TypeScript, JavaScript (ES6+), Vite, React Router, Zustand, React Query (@tanstack/react-query), Apollo Client, Tailwind CSS, ShadCN UI, CSS, SCSS, Framer Motion / Motion, Chart.js, Lucide React, @dnd-kit, Responsive Design, Glassmorphism UI
Backend Engineering: Node.js, Express.js, Python, FastAPI, REST APIs, GraphQL APIs, Authentication & Authorization, API Design, Webhooks, Background Jobs, Async Processing
Databases & Data Layer: PostgreSQL (Schema Design, Query Optimization, Indexing), MongoDB, Supabase, Redis, Vector Databases (Chroma, FAISS)
AI, LLMs & Deep Learning: OpenAI SDK, LangChain, RAG Pipelines, Context Retrieval, Prompt Engineering, Multi-Agent Systems, Embeddings, Re-ranking, Summarization, Transformers, Model Inference Pipelines, Fine-Tuning Concepts
Automation & Orchestration: n8n, API Integrations, Task Automation, Event-Driven Systems, Context Chaining
Infra & Deployment: Docker, GCP, CI/CD Pipelines, Linux, Cloud Deployment, Environment Management, Monitoring & Logging

Professional Experience

ThinkMetal Private Limited, Chennai *Jan 2023 – Present*
New Product Development Lead · Founding Engineer

- Served as a founding engineer leading end-to-end new product development across hardware, software, and systems—owning ideation, architecture, prototyping, validation, and production readiness for advanced metal additive manufacturing products.
- Led development of an integrated debinding–sintering–heat treatment furnace and a compact desktop metal 3D printer, combining mechanical design, electronics integration, firmware coordination, and simulation-driven optimization (FEA, CFD, topology optimization).
- Contributed to the development of ThinkWare, an in-house slicing and printer control software, collaborating with firmware, UX, and manufacturing teams to improve print reliability, workflow automation, and operator experience.
- Drove product operations including BOM ownership, inventory systems, SOP creation, cross-team delegation, and authored full assembly documentation; co-inventor on an international patent for a dimensionally adaptive multi-material 3D printer bed system.

Semiconductor Laboratory (SCL), MeitY — Govt. of India *2022 – 2023*
Team Lead · Research & Development Engineer

- Led development of an Automated Device Handler (ADH) for semiconductor chip segregation, contributing across system architecture, hardware–software integration, and control logic.
- Implemented synchronized actuator–sensor control pipelines enabling high-precision, repeatable chip handling with reduced manual intervention.
- Developed a self-aligning nozzle system using OpenCV-based computer vision with real-time positional correction.
- Integrated a lightweight deep learning model to improve robustness of chip alignment across varying orientations and operating conditions.

Centre for Innovation in Biomedical Devices (CIBioD), PGIMER, Chandigarh *2021 – 2022*
Project Lead · Research Intern (Bio-Robotics & Healthcare Systems)

- Led development of AI-powered assistive healthcare systems, including an intelligent patient care bed and an eye-tracking wheelchair for patients with paralysis.
- Designed embedded system architectures integrating IoT sensors, firmware, and real-time data pipelines for continuous patient monitoring.
- Implemented computer vision–based eye tracking using Haar Cascade classifiers and ML classification pipelines in Python for real-time wheelchair control.
- Collaborated closely with clinicians to translate medical requirements into deployable, patient-safe device solutions; co-inventor on a filed Indian patent.

Nottingham Trent University (NTU), UK *2021 – 2022*
Research Engineer · Medical Additive Manufacturing

- Collaborated on development of a medical-grade enclosed-chamber 3D printer for sterile PEEK implant manufacturing.
- Took ownership of mechanical system research, chamber architecture, and thermal design for sustained 120°C operating environments.
- Performed CFD and thermal simulations to optimize airflow, minimize thermal gradients, and improve print consistency.

- Co-authored peer-reviewed publications on cranial implant and fixture optimization using PEEK and alternative biomaterials.

Key Projects

AIClipper (ClipForge AI) *https://aiclipper.sramagency.com/*
Next.js, React, TypeScript, Python, FFmpeg, Ollama, PostgreSQL, Docker

- Built a full-stack web platform that converts long-form videos into high-impact short-form clips using AI-driven scoring, ranking, and selection pipelines.
- Designed backend video processing services using FFmpeg with GPU acceleration and streamed real-time processing updates to the frontend via SSE/WebSockets.
- Implemented a polished Next.js dashboard with job tracking, clip previews, status indicators, and responsive UI optimized for content-creator workflows.

FuneralFlow — AI-Assisted Document Management SaaS *http://funeraldesk.sramagency.com/*
Next.js, React, TypeScript, PostgreSQL, Prisma, OCR, n8n, Stripe

- Developed a document-centric SaaS platform to digitize, organize, and track sensitive post-funeral paperwork.
- Built secure upload pipelines, processing state machines, and role-based access control.
- Integrated AI-powered OCR and automation workflows to extract structured data and trigger notifications and billing events.

StoryBoardAI — AI-Powered Storyboarding Platform *https://github.com/RS-AIAgency/StoryBoardAI*
React, Vite, Tailwind CSS, Node.js, MongoDB, Socket.io

- Built a collaborative web application that converts raw scripts into structured storyboards using AI-based scene analysis.
- Implemented real-time multi-user editing, drag-and-drop scene sequencing, and PDF export.
- Focused on frontend UX and backend api integerations using motion animations, glassmorphism UI, and responsive design.

Portfolio Platform with AI Assistant *https://www.srama.co.in/*
Next.js (App Router), React, Tailwind CSS, Motion, Redis

- Built a high-performance personal portfolio with an embedded AI assistant for interactive exploration of projects and experience.
- Implemented context-aware responses, rate limiting, and real-time UI streaming.
- Designed a modern, accessible frontend with dark mode and motion-driven interactions.

OrgaFlow — Multi-Tenant Project Management Platform *https://github.com/Shreerama9/orgaflow*
React, TypeScript, Apollo Client, Python, Django, GraphQL, PostgreSQL

- Built a multi-tenant SaaS platform with strict data isolation and role-based access control.
- Designed GraphQL APIs, real-time subscriptions, and Kanban-style task workflows.
- Implemented scalable frontend and backend architecture for multi-organization collaboration.

PDF Helper — Web-Based Document Utility *https://pdfhelper.sramagency.com/*
Next.js, React, TypeScript, Node.js, Docker

- Developed a web application for PDF merge, split, compression, and AI-assisted summarization.
- Built backend microservices for document processing and AI integration.

Agentic Workflow Automation Platform
Python, React, n8n, Webhooks, OAuth2

- Built event-driven, agent-based automation workflows combining LLM reasoning with external APIs.
- Implemented real-time status updates and frontend dashboards for long-running workflows.

Research & Publications

- **Optimizing Cranial Implant and Fixture Design Using Different Materials in Cranioplasty** — *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications*, 2022. Focused on parametric design optimization, material comparison, and simulation-driven validation for cranial implants.
- **Designing Cranial Fixture Shapes and Topologies for Optimizing PEEK Implant Thickness in Cranioplasty** — *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications*, 2023. Explored topology optimization, CFD-driven thermal analysis, and manufacturability constraints for medical-grade PEEK implants.

Patents

- **Intelligent Patient Care Bed** — Indian Patent Application No. 202111034970 (WIPO Publication: IN393725771). AI-enabled patient monitoring and assistive mobility system integrating embedded sensors, real-time data processing, and automated actuation.
- **Active Transradial Bionic Prosthetic Arm** — Indian Patent Application No. 202211030357 (WIPO Publication: IN368687012). Designed AI-assisted prosthetic control using EMG signal processing, embedded systems, and ML-based intent classification.

- **Dimensionally Adaptive Bed, System, and Method for Multi-Material 3D Printing** — WIPO Publication No. WO2025099745A1. Invented a mechanically adaptive build platform enabling precise multi-material metal 3D printing with improved dimensional accuracy.

Certifications

- **Oracle Cloud Infrastructure 2025 Certified Generative AI Professional** — Demonstrated applied expertise in LLMs, RAG pipelines, semantic search, LangChain, and OCI Generative AI services. *Issued by Oracle · Expires Oct 2027*
- **Google Generative AI Skill Badge** — Validated hands-on proficiency in generative AI concepts, prompt engineering, and applied LLM workflows. *Issued by Google*
- **Simple Recurrent Neural Network (RNN) with Keras** — Built sequence modeling pipelines for temporal and time-series prediction tasks.
- **Classifying Radio Signals from Space Using Keras** — Implemented CNN-based spectrogram classification achieving high model accuracy.
- **Generating Synthetic Images Using DCGANs in Keras** — Designed and trained GAN architectures for synthetic image generation and data augmentation.

Education

B.E. – Mechanical Engineering, Panjab University (UIET) 2019–2023
GPA: 7.87 / 10

Focus Areas

Agentic AI Systems • Voice & WebSocket Agents • LLM Workflow Automation • GenAI SaaS Platforms • Multi-Agent Orchestration • Retrieval-Augmented Generation (RAG) • Full-Stack Deployment