Shreerama Shiva Sai Bharadwaja

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Summary

Full-Stack AI Developer with expertise in designing and deploying AI/ML systems, Retrieval-Augmented Generation (RAG) pipelines, and scalable web applications. Skilled in Python, PyTorch, TensorFlow, React, and Node.js, with hands-on experience in MLOps, containerization, and cloud deployment. Proven track record in research (3 patents, 2 publications) and delivering real-world solutions across healthcare, semiconductor, and industrial domains.

Skills

Programming: Python, JavaScript (Node.js, React, Express), MATLAB, C
AI/ML: Anthropic MCP, OpenAI SDK, PyTorch, TensorFlow, Keras, Transformers, CNN, GAN, LSTM, LangChain
Databases: MongoDB, Supabase, Pinecode, ChromaDB
Web Development: REST APIs, React.js, NextJs, Express.js, n8n Automation
Cloud & Tools: Docker, Google Cloud (basic), Git/GitHub, 3D Printing, Arduino, Raspberry Pi
Learning/Hands-on Exposure: , FastAPI, GitHub Actions (CI/CD), MLflow, Weights & Biases

Professional Experience

ThinkMetal Pvt Ltd — Founding Member and New Product Development Lead Jan 2023 – Present

- Spearheaded development of metal 3D printer components and furnace systems, optimizing performance and scalability.
- Engineered electronic assembly for enhanced thermal stability, reducing defect rate by 20%.
- Collaborated across hardware/software integration, bridging mechanical systems with AI-driven monitoring.

Semi-Conductor Laboratory — Team lead Jan 2022 – Aug 2022

- Built automatic pick-and-place machine with deep learning–driven self-alignment (TensorFlow + OpenCV).
- Designed and deployed computer vision models improving alignment accuracy by 30%.
- Managed procurement and led a 3-member team under a senior scientist.

Nottingham Trent University, England — Research Associate Jul 2021 – Jul 2022

- Designed craniofacial implants and developed medical-grade 3D printers for PEEK at high ambient temperatures.
- Used DICOM files to model skull defects and tested load-bearing capacities with Ansys simulations.

ICMR–Center for Innovation and Bio-Design, PGIMER, Chandigarh Apr 2021 – May 2022

- Developed "Intelligent Patient Care Bed" integrating IoT sensors with AI monitoring, improving patient autonomy.
- Built a wheelchair with excretion system, enhancing patient independence and improving hygine%.

Design and Innovation Center, Panjab University — Research Lead Feb 2020 – Feb 2022

- Trained TensorFlow models for prosthetic arm EEG/EMG signal interpretation (95% accuracy).
- Mentored 70+ students on AI, robotics, and 3D printing projects.
- Filed patent: Active Transradial Bionic Prosthetic Arm.

Selected Projects

SMail – Full-Stack Email Application (MERN Stack)

- Developed a full-stack email application enabling users to send and receive emails securely.
- Built a responsive frontend using **React, Redux Toolkit, Tailwind CSS, Vite**.
- Designed RESTful backend API with **Node.js, Express**, and implemented authentication with **JWT + bcrypt**.
- Managed persistent storage with **MongoDB + Mongoose** for user and email data.

RAG System (LangChain, FAISS, Python)

- Built a modular retrieval pipeline for contextual query answering with LLM integration.
- Implemented embeddings, vector search (FAISS), and response synthesis workflows.

GPT Web Scraper (LangChain, ChromaDB)

- Automated data extraction and semantic ranking using GPT-powered pipelines.
- Designed intelligent sorting and categorization algorithms for research and lead generation.

Fine-Tuning GPT (PyTorch)

- Developed preprocessing and training pipeline for domain-specific GPT fine-tuning.
- Implemented tokenization, loss optimization, and evaluation workflows.

n8n Workflow Automations (APIs)

- Automated workflows for lead generation, content publishing, and stock market newsletter.
- Reduced manual effort by 60% through API integrations and task scheduling.

Education

BE – Mechanical Engineering, Panjab University (UIET) 2019 – 2023 (7.87/10)
Class 12 (CBSE), GMSSS Chandigarh 2019 – 72.8%
Class 10 (CBSE), CLDAV Panchkula 2017 – 9.4/10 GPA

Certifications

- Anthropic — Model Context Protocol (MCP), 2025
- Coursera — Simple RNNs with Keras
- Coursera — Classify Radio Signals with Keras
- Coursera — Generate Synthetic Images with DCGANs

Publications & Patents

- 2 peer-reviewed papers on cranial implant optimization (SAGE Journals).
- Patent: Intelligent Patient Care Bed (2021).
- Patent: Active Transradial Bionic Prosthetic Arm (2022).