

Purvansh Sonthalia

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🌐 Purvansh-Sonthalia

Summary

A **Software Developer** with hands-on experience building end-to-end AI products across **Computer Vision, Speech Processing, Generative AI, and Full-stack deployment**. I enjoy solving real-world problems, working closely with teams, and turning complex ideas into practical, production-ready systems.

Education

Indian Institute of Information Technology, Kalyani 2020 – 2024
B.Tech in Computer Science and Engineering
◦ CGPA: 9.06/10.0

Professional Experience

AEOS Labs 2024 – Present
AI Engineer / Fullstack Developer
◦ Built and deployed generative AI systems for consumer and brand campaigns.
◦ Owned backend architecture, model integration, and production deployment.

Projects

Autonomous Multilingual 112 Call Agent Oct 2024 – Dec 2024,
Oct 2025 – Dec 2025
Bangalore City Police
◦ Built an **autonomous voice-based call agent** capable of handling **112 distress calls** without human operators.
◦ Supported **multiple Indian languages** including **Hindi, English, Kannada, Marathi, and Bengali** for wider accessibility.
◦ Performed **real-time caller intent detection, urgency assessment, and information extraction** to enable faster police response.
◦ Integrated with the police's **existing call routing and dispatch infrastructure** using a **Livekit agent pipeline**.
◦ Designed for **low-latency, high-reliability** operation during emergency scenarios.
◦ **Tech Stack:** OpenAI API, TypeScript, GoLang, AWS EC2, Kubernetes, NGINX, PostgreSQL, Redis

Voice Fingerprinting and Speaker Verification System Oct 2024 – Dec 2024
Bangalore City Police
◦ Built a **speaker verification system** for **multi-speaker, noisy surveillance environments**.
◦ Used a custom trained **Transformer** based **Autoencoder** model for embedding creation and a simple cosine similarity to compare the **voice embeddings**.
◦ Designed a **custom vector database** for fast similarity search across large audio datasets.
◦ Integrated with existing **call-tapping pipelines** using **Livekit agents** to enable **near real-time speaker detection**.
◦ **Tech Stack:** Python, PyTorch, Librosa, NumPy, FastAPI, AWS EC2, Kubernetes, NGINX

AI-Powered Community Management Platform Jan 2025 – Present
Patrika
◦ Architected a **serverless, event-driven backend** on AWS for a community mobile application handling Posts, Events, and Issues.
◦ Developed a **Real-time AI Chatbot** using **OpenAI APIs** and **Server-Sent Events (SSE)** via API Gateway for low-latency, streaming responses.

- Implemented **RAG (Retrieval-Augmented Generation)** to enable **semantic search** and **automated member matching** based on user interests and hobbies.
- Optimized database scalability using **Amazon RDS Proxy** with **PostgreSQL**, preventing connection exhaustion during traffic spikes.
- Decoupled heavy background processes (notifications/analytics) using **Amazon SQS** and **DLQ** for fault tolerance.
- Secured the ecosystem with **AWS WAF**, **Cognito** authentication, and isolated compute resources within a **Private VPC** using **NAT Gateways**.
- **Tech Stack:** AWS Lambda, API Gateway, PostgreSQL, PostgreVector DB, Amazon SQS, OpenAI API, Firebase FCM, AWS WAF.

Job-Skills Prediction System using Gameplay Data

Feb 2025 – July 2025

BGMI (Battlegrounds Mobile India) bgmicareermode.com 

- Predicted **player personality traits** and **career inclinations** using **in-game statistics + scenario-based inputs**.
- Chose **K-Nearest Neighbors (KNN)** for **model transparency and interpretability** in a user-facing product.
- Built and deployed the complete platform with a **production-grade backend and responsive UI**.
- Managed **cloud infrastructure, APIs, and database design** to support real-world traffic.
- **Tech Stack:** Python, Scikit-learn, Next.js, PostgreSQL, Redis, AWS Lambda

Music Generation Chatbot

Aug 2025 – Jan 2026

Santoor

- Built an **Instagram chatbot** that generates **personalized lyrics and 45–90 second songs**.
- Converted user **vibe, mood, and genre** into structured prompts for **music generation models**.
- Automated **audio + branded visual stitching** for social-media-ready content.
- Enabled **direct story sharing** through the chatbot flow.
- **Tech Stack:** Python, LLM APIs, ElevenLabs/Suno API, Instagram APIs, Next.js backend, AWS Lambda

Image Generation Chatbot

June 2025 – July 2025

Daawat

- Developed a **WhatsApp chatbot** for generating **personalized images** from user photos.
- Designed the complete **image generation flow** including photo ingestion and prompt conditioning.
- Ensured **brand-safe and consistent outputs** across generated images.
- **Tech Stack:** Python, OpenAI APIs, WhatsApp APIs, AWS Lambda, PostgreSQL

Skills

- **Languages:** Python, C#, Java, TypeScript, GoLang, Rust
- **Machine Learning:** TensorFlow, PyTorch, Scikit-learn, Keras, XGBoost, Vector Databases
- **Generative AI:** ChatGPT, Claude, Gemini APIs, Langchain, RAG, Prompt Engineering
- **Web & Backend:** Next.js, PostgreSQL, Redis, FastAPI, Serverless, Event-Driven Architecture
- **Cloud & DevOps:** AWS (Lambda, API Gateway, SQS, RDS), Docker, Kubernetes, NGINX, Firebase