

Samrat Ghosh

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SKILLS SUMMARY

- Programming:** Python, Java, C, C++, JavaScript, TypeScript
- AI/ML & GenAI:** Machine Learning, Deep Learning, NLP, Computer Vision, GenAI, SLMs, RAG, Prompt Engineering
- Frameworks & Tools:** PyTorch, TensorFlow, Hugging Face, LangChain, FastAPI, MERN Stack, Tailwind CSS, MySQL
- Automation & Cloud:** AWS / GCP (exposure), RPA (UiPath, Automation Anywhere), Docker, MLOps / DevOps
- Version Control & Utilities:** Git, GitHub, VS Code, Postman, Jupyter Notebook
- Soft Skills:** Leadership, Problem-Solving, Teamwork, Communication, Project Management, Adaptability

PROJECTS

- ApneaView – Sleep Apnea Detection (AI + Full Stack) | [Live Demo](#)** November 2025
 - Coded an AI-powered healthcare system for detecting sleep apnea using ECG signals with a custom-trained 1D Convolutional Neural Network (CNN) model.
 - Built a FastAPI backend for real-time model inference and integrated it with a React + TypeScript frontend for interactive ECG waveform visualization.
 - Implemented a clinical risk estimator that calculates apnea risk based on user health metrics like BMI, snoring, and blood pressure.
 - Deployed the backend on Render and frontend on Vercel, making it a continuously live platform for real-time sleep apnea screening via web interface.
- SeedSense - Seed Quality Analyzer (AI + Full Stack) | [Live Demo](#)** May 2025
 - Developed an end-to-end AI system for automated seed quality classification using React(TypeScript) frontend and FastAPI backend.
 - Engineered feature extraction pipelines using color histogram, Laplacian variance, and shape descriptors for quality analysis.
 - Trained and optimized a Random Forest model for multi-class classification with high accuracy.
 - Designed REST APIs for model integration and scalable AI deployment.
- AI-Powered Travel Planner (GenAI + Agentic System) | [Live Demo](#)** January 2025
 - Built a GenAI-based assistant using Google Gemini API for generating personalized travel itineraries.
 - Integrated LangChain-style pipelines, Hugging Face embeddings, and contextual reasoning for intent-based recommendations.
 - Implemented Copilot-style conversational UI with voice input and real-time itinerary updates.
 - Designed a modular agentic architecture adaptable to domain-specific autonomous travel assistants.

ACHIEVEMENTS

- Research on audio-based sleep apnea detection** 2025
Accepted for presentation and publication at the ICIRDST - 2025
- Media Club President** 2020 - 2022
Auxilium Convent School

CERTIFICATIONS

- Automation Developer Associate Training – ICT Academy April 2025
- Master Course in Artificial Intelligence – Great Learning April 2025
- Cloud Computing - NPTEL December 2024
- Application Development in Java - LPU July 2024

EDUCATION

- Lovely Professional University** Phagwara, Punjab
Bachelor of Technology - Computer Science and Engineering Since August 2022
Relevant Coursework: Machine Learning, Data Base Management System, Data Structures and Algorithm, Robotic Process Automation
- Auxilium Convent School** Barasat, West Bengal
Percentage: 66.25% April 2020 - March 2022
Relevant Coursework: Physics, Chemistry, Mathematics, Computer Science
- Auxilium Convent School** Barasat, West Bengal
Percentage: 75.20% April 2019 - March 2020