

# Subhash Chandra Adak

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## EXPERIENCE

### Software Engineer

Nov. 2025 – Present

*Brainium Information Technologies Pvt. Ltd*

*Kolkata*

- Developed a tool-based RAG application using FastAPI, Vertex AI, and Pinecone, implementing vector embedding and retrieval pipelines to enable accurate conversational search over invoices, past orders, and product data.
- Built and trained a TensorFlow model to identify incorrect or fraudulent invoices, supporting automated validation and reducing manual review effort.

### Jr. Software Developer

Aug. 2024 – Oct. 2025

*EBIW Info Analytics Pvt. Ltd*

*Kolkata*

- Engineered a secure and scalable backend system to perform fuzzy record matching on 30M+ records in Google BigQuery using Jaro-Winkler, Metaphone3, and Levenshtein distance, achieving high-precision entity resolution with sub-10s response time. Designed RESTful APIs with Basic Authentication to ensure secure and controlled access across integrated services.
- Developed a smart web crawler with dynamic scrolling and document scraping using Python, Playwright, and BeautifulSoup, enhanced with AI-based data querying and dataset preparation.
- Developed an automated trending content generation system using n8n workflow automation tool, improving content discovery and user engagement.
- Built backend infrastructure for an affiliate marketing platform using Python, FastAPI and MongoDB, enabling seamless tracking and processing of affiliate transactions.

## PROJECTS

### School ERP Platform | *Python, Flask, MySQL, React, SMTP*

Mar. 2024 – Jun. 2024

- Built a centralized School ERP platform for end-to-end management of academics, finance, library, and communication workflows.
- Implemented barcode-based library operations, automated email notifications, dynamic fee calculations, and secure role-based access control.
- System currently serves over 3,500 students annually and manages 20,000+ library records, improving efficiency across all school operations.

### Real-time Voice Assistant | *OpenAI Realtime API, WebSocket, Python*

Jan. 2025 – Mar. 2025

- Architected voice assistant using OpenAI Realtime API achieving sub-300ms latency for natural speech-to-speech conversations with WebSocket connections and automatic interruption handling.
- Integrated function calling and context-aware responses with 92% accuracy, optimizing audio processing with custom VAD algorithms for enterprise reliability.
- Deployed a production-grade real-time audio streaming system with effective noise cancellation.

## TECHNICAL SKILLS

**Languages** : Python, Java, JavaScript

**Frameworks** : LangChain, FastAPI, Phidata, CrewAI, Flask, Selenium

**Libraries** : NumPy, Pandas, Scikit-learn, Matplotlib, Hugging Face

**Database** : MySQL, MongoDB

**Vector Databases** : Pinecone, Faiss, ChromaDB

**Cloud Platforms** : Google Cloud Platform (Vertex AI, BigQuery, Cloud Run, Cloud Storage, IAM)

**Other Skills** : NLP, Multi-Agent Systems, Prompt Engineering, Agentic RAG, MCP, Git, Docker

## EDUCATION

### Sikkim Manipal University

Sikkim

*Master of Computer Applications*

*Aug. 2025 – Present*

### Kharagpur College

Kharagpur

*Bachelor of Computer Applications*

*Sep. 2021 – Aug. 2024*

## CERTIFICATIONS

I. Generative AI Professional (1Z0-1127-25) by Oracle    II. Diploma in Computer Application (DCA)