

# JOYBRATA SARKAR

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## FULL STACK AI ENGINEER | CONVERSATIONAL AI

I contribute as a **Full Stack Ai Engineer** by developing and optimizing **conversation AI interview Agent**, which includes engineering a two-phase audio intelligence pipeline to enhance human-like interactions for candidates. My work has delivered enterprise-grade AI modules with 99.9% uptime, supporting over 10K active users in current platforms.

With a **Master of Computer Applications** from BIT Durg and ongoing studies in **Post Graduate Certificate Programme in Applied-Data Science** at IIT Roorkee, I bring a strong academic foundation to my work.

My expertise **encompasses** in core Data structure, systems design, Frontend, Backend, Ai, Docker, and WebSocket, with a focus on creating SaaS platform.

### TECHNICAL SKILLS

|                   |  |
|-------------------|--|
| <b>AI/ML:</b>     | Conversational AI, RAG, NLP, LLM Integration, Generative AI              |
| <b>Systems:</b>   | Distributed System, Real-Time Architecture, Scalable APIs, Microservices |
| <b>Frontend:</b>  | React, Angular, Performance Engineering (NgRx, lazy loading, Caching)    |
| <b>Backend:</b>   | FastApi, Python, WebSocket, Redis, Celery                                |
| <b>DevOps:</b>    | Docker, CI/CD, Cloud Deployment  |
| <b>Databases:</b> | PostgreSQL, MongoDB  |

### KEY ACHIEVEMENTS / OUTCOME ACROSS TENURE

#### @ Impacteers:

- Engineered AI Modules which are serving real user.
- Deployed **4 production-grade AI modules**, reducing recruiter workload by **20%**.
- Scaleable Data science Pipeline to support global usage, ensuring high availability and uninterrupted user experience.
- Delivered measurable improvements in responsiveness, scalability, and AI integration.

#### @ Supersourcing:

- Delivered **3 enterprise SaaS platforms**, including AI Interview, ATS, and Vendor Management, within aggressive timelines.
- Optimized frontend performance by **~30%** through NgRx state management, lazy loading, and caching strategies.
- Conducted technical interviews and peer code reviews, contributing to strong hiring decisions and team growth.
- Consistently met KPIs** around product delivery, UI performance, and cross-functional collaboration.

### PROFILE SUMMARY

- Combines software engineering discipline with deep AI expertise to design systems that think, adapt, and scale.
- Brings a **product-first mindset**, focused on **building systems** that solve **real hiring** and **decision-making** challenges.
- Strong at **moving from prototype to production**
- Comfortable working across the stack — from **scaling backend architectures** and **integrating AI pipelines** to **craft seamless user journeys** in Angular/React.
- Values **clean interfaces**, **observable systems**, and **architectural decisions** that ensure **long-term scalability**.
- Collaborates effectively with **PMs/Product owner**, **designers**, **StakeHolder**, and **DevOps** to keep delivery aligned with **business value**.

## CORE COMPETENCIES

- Conversational AI & NLP Pipelines
- RAG Systems & LLM Integration
- Distributed Systems & Real-Time Architecture
- Microservices & Scalable APIs
- Frontend Performance Engineering (React, Angular)
- System Design
- Technical Leadership & Team Management
- AI-Driven Product Development

## WORK EXPERIENCE

|                                     |                |
|-------------------------------------|----------------|
| Impacteers   Full Stack AI Engineer | Since Dec 2024 |
|-------------------------------------|----------------|

### Performance Highlights

- Architecture and development of Impacteers Data science module, a **modular monolith architecture** which **enables** seamless integration of **independent modules** and future **microservices migration**.
- Delivered a fault-tolerant **distributed system** using FastAPI, Redis (pub/sub, session locking), Celery, and asyncio, handling 100+ concurrent WebSocket connections with sub-50ms latency
- Built an AI JD Creator using an adaptive RAG pipeline, **ingested 20K+ job descriptions** to generate high-quality, role-specific JDs with **context-aware prompt engineering**.
- **Developed a job-fit scoring engine leveraging lexical, phonetic, and semantic similarity algorithms**, generating **recruiter-ready reports** powered by LLMs for actionable candidate insights.
- Built production audio pipeline: Silero VAD (pause) + Pipecat (turn) for **real-time speaker-turn detection**.
- Implemented **hybrid memory** (sliding-window + semantic + episodic) technique to preserve the context.
- **Orchestrated conversation flow** with LangGraph.
- Developed a **RAG-based** career guidance chatbot featuring **Context memory** and a **multi-phase pipeline** (ingestion → inference → evaluation) for accurate, explainable recommendations.

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|-----------------------------------|-------------------|
| Supersourcing   Frontend Engineer | Dec2022 – Nov2024 |
|-----------------------------------|-------------------|

### Performance Highlights:

- Boosted application performance and reduced load times by implementing **NgRx state management, lazy loading, and component-level caching**.
- Spearheaded the delivery of **3 enterprise-grade SaaS platforms** (AI Interviews, ATS, Vendor Management), accelerating product launch cycles.
- Developed and deployed a real-time, low-latency AI interview platform using LangChain, FastAPI, AssemblyAI, and Eleven Labs, enhancing user interaction through emotion recognition and interruption handling.
- Influenced key architectural decisions as front-end lead, improving code maintainability and cross-team collaboration.
- Elevated **team performance** by conducting technical interviews, onboarding new developers, and enforcing high-quality coding standards via code reviews.

## PROJECT DETAILS

### AI Developer Search Engine (GitHub), 2024:

- Built a semantic LLM-based candidate retrieval system with TF-IDF, cosine similarity, and MongoDB indexing

### Multimodal Video Query RAG System (GitHub), 2025:

- Designed RAG pipeline using BLIP, Whisper, Sentence Transformers, FAISS
- Enabled fast video retrieval with frame-level matching and timestamped results

## EDUCATION

### **Post Graduate Certificate Programme in Applied-Data Science & AI**

IIT Roorkee, 2025-2026

### **Master of Computer Applications**

Bhilai Institute of Technology, Chhattisgarh – 2020-2022

### **Bachelor of Computer Applications**

KLE Society's S Nijalingappa College, Bengaluru – 2017-2020