# Aritra Basak

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## Software Engineer | Software Developer

Full Stack Software Engineer with over 2 years of experience building scalable, high-performance applications using Java, Spring Boot, and React.js. Proven ability to develop robust backend services, and integrate AI-driven solutions that drive measurable business outcomes. Passionate about solving complex technical challenges and continuously evolving through hands-on innovation.

## Education

**Narula Institute of Technology**, B-Tech in Electronics and Communication Engineering — Aug 2019 – June 2023
- DGPA: 9.07/10

**Julien Day School**, Class 12 (ISC, Stream: Science) — April 2018 – June 2019
- Percentage: 81/100

**Julien Day School**, Class 10 (ICSE, Stream: General) — April 2016 – June 2017
- Percentage: 84/100

## Experience

**Consultant (previously Associate Consultant & Senior Analyst)** , EY – Kolkata, India — Feb 2023 –
- Engineered a multifunctional Insurance Claim Details Fetching Chatbot using Python, integrating LangGraph, Ollama, PGVector, and all-MiniLM-L6-v2 embeddings; orchestrated multiple specialized agents for arithmetical computation, analytical reasoning, query filtering, and vector-based semantic retrieval.
- Developed an AI-driven Grievance Portal using GenAI models for multilingual text extraction from grievance forms for the Chhattisgarh Government, reducing manual data processing time by 60% and accelerating response times by 2× for the Chhattisgarh Government.
- Developed an LLM-integrated Python automation system for the West Bengal Birth and Death Portal, enabling intelligent document classification and data extraction from uploaded birth and death certificates, increasing validation accuracy by 35% and reducing manual verification time by 80%.
- Was the lead engineer of the back end development of a new microservices-based application , using Spring Boot, gRPC, JWT Auth and more, for a West Bengal Government initiative.
- Lead the development of the Ayushman Bharat Digital Mission Connector v2.0, engaging directly with government clients to align technical delivery with requirements and overseeing full-stack development using React.js and Spring Boot.
- Worked directly with government clients from West Bengal, Telangana, and Rajasthan on software implementation projects, contributing to public sector digital transformation through hands-on R&D and solution delivery.
- Engineered a Python script for medical insurance fraud detection, significantly augmenting the system's ability to identify fraudulent claims by an impressive 70%.
- Developed a standalone Java service utilizing multithreading techniques for efficient Health records linking, increasing daily Health Record linking by over 100% for a West Bengal Government project.

**Java Programmer Intern** , Suven Consultants and Technologies Pvt. Ltd. – Kolkata, India — July 2022 – August 2022
- Strengthened Java programming skills through hands-on project work, developing Java projects based on core principles to reinforce learning.

## Projects

### AI-Agent. GitHub URL

- Developed a personal AI Agent using Python and Generative AI, enabling real-time responses beyond standard LLM limitations. Features include email automation, local file search, and RAG-based document analysis.
- Tools Used: Python, Generative AI, RAG based Document Analysis, Function Calling.

### High-Concurrency User Service with Fault-Tolerance (Spring Boot) . GitHub URL

- Built a Spring Boot POC demonstrating real-world concurrent user handling using optimistic locking, Resilience4j (circuit breaker, rate limiting, bulkhead, retry), Caffeine caching, and multithreaded integration testing.
- Tools Used: Java, Spring Boot 3, Spring Web, Spring Data JPA, Hibernate, H2 Database, Resilience4j, Caffeine Cache, Spring Cache, Spring Boot Actuator, JUnit 5, Maven, Git .

### Big Brain. Project URL

- Developed and deployed a functional application enabling users to upload, query, and perform vector searches on documents and notes while facilitating collaborative sharing through organizations.
- Tools Used: Next.Js, Typescript, Clerk, Convex, Groq-Cloud Inference, Shadecn UI.

### Graph QL Integration. GitHub URL

- Optimized API performance by migrating from REST to GraphQL, achieving a 45% latency reduction and allowing users to dynamically select fields through parameterized queries for more efficient data retrieval.
- Tools Used: Java, Spring Boot, Graph QL, Postman API.

### User Contact Service. GitHub URL

- Gained hands-on experience with microservice architecture, learned how to integrate Spring Cloud Netflix dependencies, and developed a foundational understanding of deploying Spring Boot services using Docker. I plan to further enhance the system by integrating new technologies to expand its capabilities
- Tools Used: Java, Spring Boot, REST API, Spring Cloud, Mongo DB, Postman, Docker.

## Technologies

**Languages:** Java, Python, JavaScript, SQL, GraphQL

**Frameworks and Libraries:** Spring Boot, Spring MVC, Spring Data, Spring Security, React.js, Tailwind CSS, Bootstrap, FastAPI, LangGraph

**Technologies:** REST API, gRPC, Prompt Engineering, RAG pipelines, Monolithic and Microservices Architecture, Apache APISIX, Grafana, Docker, Git, Postman, Microsoft SQL Server, MySQL, MongoDB

## Honors and Awards

### Client Extraordinaire 2024

Recognized as "Client Extraordinaire" for delivering exceptional results and fostering strong client relationships across multiple projects.

### Emerging Extraordinaire 2023

Received "Emerging Extraordinaire" award for outstanding performance during the first six months at EY