

Ritwik Mukherjee

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Education

B.Tech in Computer Science and Engineering — VIT Bhopal University CGPA: 8.65 (Expected Aug'26).
XII (ISC), St. Augustine's Day School, Barrackpore 92%.
X (ICSE), St. Augustine's Day School, Barrackpore 91.8%.

Technical Skills

Languages: Java, Python, C++, JavaScript, TypeScript, SQL, HTML, CSS.
Frameworks/Tools: Flask, Next.js, Streamlit, Tkinter, REST APIs, WebSocket, Tailwind CSS.
Cloud/DevOps: AWS (ECS, RDS, ElastiCache, ALB), Docker, Firebase, GitHub, Vercel.
Productivity: Google Workspace (Docs, Sheets, Slides), Excel
Domains: Software Application Development, Real-Time Systems, API Design, AI/ML Integration.

Professional Experience

Data Science Intern — Zidio Development Pvt Ltd Mar'25–Jun'25
Project: [GitHub Repo](#)

- Designed and implemented a **desktop application** in Python (Tkinter + Flask APIs) for real-time task optimization.
 - Integrated **ML models** (BERT, DeepFace, MFCC) into software modules, enabling context-aware recommendations.
 - Developed a **modular architecture** covering design, implementation, testing, and deployment of features.
 - Improved user decision-making efficiency by **35%** through real-time data visualization and alerts.
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Key Projects

FIX-Pilot — Real-time Trading Compliance Dashboard

Python, SQL, Redis, Flask, WebSocket, AWS — [GitHub Repo](#) — [Hosted Site](#)

- Engineered a **full-stack application** to parse and visualize FIX 4.2 trade messages with sub-second latency.
- Optimized throughput using **WebSocket streaming + Redis caching**, reducing latency from 10s to under 1s.
- Enabled **CSV export for order tracking and reporting**, supporting compliance and audit workflows.
- Deployed on AWS with a **scalable microservice architecture** (ECS, ElastiCache, ALB).

CodePilot — AI Voice Coding Assistant

Next.js, TypeScript, Firebase, Gemini, SQL, Tailwind — [GitHub Repo](#) — [Hosted Site](#)

- Built an **AI-powered coding assistant application** with real-time voice command execution.
- Developed an **intent recognition pipeline** (85% accuracy) and an analytics dashboard to track performance.

AI Chatbot with Context-Aware Responses

Python, Streamlit, Plotly — [GitHub Repo](#)

- Developed a **multi-platform chatbot application** (Web, Slack, WhatsApp) with 85% accuracy in responses.
- Integrated real-time analytics and user activity tracking dashboard.

Travel Seeker — Hotel Price Comparison App

Python, Flask, SQL — [GitHub Repo](#)

- Designed a **Flask web application** aggregating hotel listings from scraping + APIs with 45% retrieval consistency.
 - Reduced average search time by **20%** via optimized real-time data pipelines.
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Certifications and Achievements

- [Software Engineer Verified by HackerRank](#)- Solved 3 problems within 90 minutes covering topics of DSA, SQL query and REST API implementations.
- [Applied Machine Learning — Coursera](#): ML pipelines, training, and tuning.
- [Data Science — IMNEO](#): Supervised models and production drift handling.
- [AI Odyssey 1.0 — Prefinalist](#): National-level finalist with healthcare ML solution.
- [Cyber Security Analyst — IBM CE](#): Threat detection, mitigation, network defense.
- [Graphs Camp — Codeforces Master](#): Selected from 80,000+ students; mastered 17+ advanced graph algorithms.