

# Ritwik Mukherjee

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## Education

**B.Tech CSE (Health Informatics)** — VIT Bhopal University  
**XII (ISC)** — St. Augustine's Day School, Barrackpore  
**X (ICSE)** — St. Augustine's Day School, Barrackpore

CGPA: 8.65 (Expected Aug'26).  
92%.  
91.8%.

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## Technical Skills

- **Languages:** Python, Java, C++, JavaScript, TypeScript, SQL, HTML, CSS.
  - **Machine Learning Tools/Frameworks:** NumPy, Pandas, Streamlit, Matplotlib, Scikit-learn, TensorFlow, Keras, PyTorch, Hugging Face Transformers, OpenCV.
  - **Web Dev Frameworks/Tools:** Flask, Next.js, Tailwind CSS, ShadCN UI, Redis, Firebase, Firestore, WebSocket, REST APIs, Plotly.
  - **Platforms & DevOps:** Windows, Linux, AWS, Docker, Firebase Hosting, GitHub, Vercel, Streamlit Cloud.
  - **Domains:** Full-Stack Development, API Integration, Cloud Computing, Scalable Systems, DevOps, Machine Learning, AI/ML Integration, Real-Time Data Processing.
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## Professional Experience

**Data Science Intern — Zidio Development Pvt Ltd**

Mar'25–Jun'25

Project: [GitHub Repo](#)

- Engineered a multimodal AI-powered desktop application using **DeepFace**, **MFCC**, and **BERT** to detect emotions and recommend tasks in real-time (tested on 100+ input combinations).
  - Optimized task workflows via **Flask APIs and Tkinter GUI**, improving decision-making speed by **35%**.
  - Enabled emotion-driven task suggestions, reducing friction and improving guidance for new users.
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## Key Projects

**FIX-Pilot — Real-time FIX Trading Dashboard (Python, Flask, Redis, WebSocket, AWS)**

April'25-August'25

Project: [GitHub Repo](#) — [Hosted Site](#)

- Built a real-time system to parse and visualize FIX 4.2 messages with sub-second latency, enabling automated compliance monitoring, instant CSV exports, and symbol tracking.
- Reduced FIX message latency from **5–10s to under 1s** using Redis caching and WebSocket streaming, improving system response by **75%**.

**CodePilot — AI Voice Coding Assistant (Next.js, TypeScript, Firebase, Genkit, Gemini)**

December'24-February'25

Project: [GitHub Repo](#) — [Hosted Site](#)

- Built an AI-powered voice coding assistant supporting 7+ languages, reducing manual coding effort by **40%**.
- Integrated **Firebase Auth with SendGrid** for emails, persistent data storage with Firestore, and deployed on Firebase Hosting using serverless backend functions.

**AI Chatbot with Context-Aware Response Optimization (Python, Streamlit, Plotly)**

July'24-October'24

Project: [GitHub Repo](#)

- Achieved **80–85% intent recognition accuracy** and reduced response time by **30%**.
- Built a **Plotly dashboard** for visualizing security events and integrated alerts via Web, WhatsApp, and Slack.

**Travel Seeker — Hotel Price Comparison (Python, Flask, SQL)**

August'23-October'23

Project: [GitHub Repo](#)

- Aggregated hotel listings via scraping and APIs with **45% retrieval consistency**.
  - Reduced hotel search time by **20%** using real-time data pipelines.
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## Certifications

- [HackerRank Software Engineer \(Verified\)](#) — Solved 3 problems in 90 minutes (DSA, SQL, REST API).
  - [Applied Machine Learning – Coursera](#) — Built ML pipelines with data preparation, training, and tuning.
  - [Data Science – IMNEO](#) — Supervised models and production drift handling.
  - [Cyber Security Analyst – IBM CE](#) — Learned threat detection, mitigation, and network defense.
  - [AI Odyssey 1.0 – Prefinalist](#) — Built ML healthcare solution, selected for national-level finals.
  - [Graphs Camp – AlgoUniversity](#) — Selected from **80,000+** students and mastered **17+** advanced graph algorithms.
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## Honours & Achievements

- [Leetcode](#) - Solved more than **250+ problems** including 122 medium and 42 hard problems based on DP, Hash Table, Greedy, Linked List, Array and many more.
- [Codeforces](#) - Achieved a global ranking of **298** in the codeforces Round 1043 (Div.3), while solving problems based on string manipulation, number theory, greedy/base-3 tricks, digit sums with binary search, DP, and graph traversal.
- Awarded a memento for securing **90%+** in both Class X and XII board exams, for **outstanding academic achievement**.