

Naman Bordia

Student - B.Tech CSE (AI/ML)

Bangalore, India — namanbordia@gmail.com — +91 9351061670
namanbordia.in — Linkedin — github

EDUCATION

B.Tech (Hons.) in Computer Science and Engineering, RV University – Bangalore

- GPA: 8.91 / 10.0
- Coursework: Data Structures & Algorithms, Operating Systems, DBMS, Computer Networks, Software Engineering

EXPERIENCE

Frontend Intern, Gouvernaice (UC Berkeley Startup) – Remote

- Designed and developed scalable frontend architecture using React.js for a production-grade web platform.
- Collaborated with cross-functional stakeholders to translate product requirements into performant UI components.
- Improved responsiveness and page performance, enhancing user experience across devices.

Research Intern, CVCSI Research Center, RV University – Bangalore

- Worked on data distillation and synthetic data generation to improve ML training efficiency.
- Applied engineering principles to preprocess large datasets and evaluate model reliability.

RESEARCH EXPERIENCE

Synthetic Data Generation for Rare Event Prediction

- Proposed a hybrid synthetic data generation framework combining CTGAN with LLM-based semantic validation.
- Used LLMs as reasoning engines to convert natural-language business rules into executable data constraints.
- Addressed semantic blindness in generative models for highly imbalanced datasets.
- Achieved a $3\times$ **improvement in minority-class F1-score** compared to baseline models.
- **Paper submitted to IEEE RECAP 2026 (under review).**

PhysioRAG: Evidence-Based Physiotherapy Conversational AI

- Peer-reviewed research paper **accepted via EDAS**, presenting a domain-specific Retrieval-Augmented Generation (RAG) system.

PROJECTS

PhysioRAG: Evidence-Based Physiotherapy AI (RAG System)

- Designed a modular Retrieval-Augmented Generation (RAG) system grounded in peer-reviewed medical literature.
- Built a large-scale knowledge base from 20,000+ PubMed Central articles using PubMedBERT embeddings and ChromaDB.
- Implemented LLM-based query transformation to bridge layperson queries and biomedical terminology.
- Achieved **0.89 Faithfulness (RAGAS)** with significant gains in Precision@5 and Recall@5 over baseline RAG systems.
- Prioritized hallucination mitigation, reliability, and citation-grounded responses for clinical safety.

Real-Time Predictive Maintenance System (IoT + LSTM)

- Built a real-time data collection system using ESP32 sensors to monitor vibration and temperature.
- Designed a Flask-based backend serving LSTM models for multi-step time-series forecasting.
- Implemented live dashboards and monitoring to improve observability and early fault detection.

Community Issue Reporting Platform (React + Flask)

- Developed a full-stack web application for reporting and tracking community issues.
- Implemented RESTful APIs, role-based access control, and admin management tools.
- Focused on scalability, usability, and data consistency.

Automatic Door Locking System (IoT)

- Built a smartphone-controlled IoT security system using local network communication.
- Implemented secure device control and real-time status monitoring.

SKILLS & TECHNOLOGIES

Languages: Python, Java, C++ , C, JavaScript, SQL, Solidity

Core CS: Data Structures & Algorithms, OOP, Operating Systems, DBMS, Computer Networks

Frameworks & Libraries: React.js, Node.js, Flask, NumPy, Pandas, LangChain

Systems & Tools: Docker, Git, MongoDB, ChromaDB, AWS, REST APIs

Concepts: Software Engineering, Distributed Systems (Basics), RAG, Deep Learning (LSTM), IoT, Agile

CERTIFICATIONS

- Design & Implementation of Human-Computer Interfaces – NPTEL
- Programming in Modern C++ – NPTEL
- Machine Learning Specialization – Coursera

LANGUAGES

- Hindi: Native — English: Full Professional Proficiency