Ashish Shrivastav

Machine Learning | LLMs & RAG | Edge AI
National Winner — "AI for All" Innovation Challenge (Qualcomm)
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EDUCATION

Bachelor of Technology (B.Tech) in Information and Communication Technology Aug 2023 – Present
Adani University, Ahmedabad, Gujarat
CGPA: 8.60 / 10.00

RESEARCH INTERESTS

- **LLMs & Retrieval-Augmented Generation (RAG):** LLM-based reasoning, structured retrieval, knowledge graphs, embeddings, and context-aware AI systems.
- **Generative AI & Financial AI:** Applications of LLMs to financial information extraction, reasoning, retrieval, and intelligent automation.
- **Machine Learning & Deep Learning:** Applied machine learning, model optimization, statistical learning, and efficient AI systems.

RESEARCH AND PROJECT EXPERIENCE

Moodle AI Assistant — RAG-Based University AI Platform Jun 2026 – Present
AI / Generative AI Project

- Building an AI assistant for a university Moodle platform using Retrieval-Augmented Generation (RAG) to provide context-aware responses over academic course content.
- Developing the end-to-end AI application, retrieval pipeline, and backend using an open-source AI stack, with cloud-based services currently used for development, testing, and debugging.
- Preparing the complete system for deployment on university-managed infrastructure, including the backend, retrieval, and application deployment components.

SafeGuard-AI: TinyML Fall Detection System Jan 2026 – Feb 2026
Rank 1 National Winner & Qualcomm Booth Exhibitor India AI Impact Summit, Delhi

- Designed and trained a TinyML deep learning model for fall detection using IMU sensor data and engineered motion features.
- Optimized and deployed a quantized TensorFlow Lite model for real-time on-device inference on Arduino UNO Q.
- Selected to demonstrate SafeGuard-AI at the **Qualcomm booth** during the **India AI Impact Summit 2026**.
- Project Links: GitHub | Demo

Analyzing Indian Stock Markets through Correlations Jul 2025 – Dec 2025
Research Project

- Analyzed inter-sector dependencies in the Indian stock market using Pearson, Spearman, Kendall's Tau, and time-lagged cross-correlation techniques to study linear and non-linear relationships.
- Built financial network models using Minimum Spanning Trees (MST) and implemented time-series preprocessing and feature extraction pipelines for market stability and structural dependency analysis.

Fraud Detection System Apr 2024 – Jul 2024
Academic Project

- Developed a hybrid fraud detection pipeline combining heuristic rules and LLM-based signals to identify anomalous transactions with reduced false positives.
- Designed a human-in-the-loop review mechanism for borderline cases to improve decision reliability in high-risk scenarios.

INTERNSHIP EXPERIENCE

Remote Research Intern Apr 2026 – Jul 2026
Nanyang Technological University (NTU), Singapore

- Worked under the guidance of Zihao Huang and the SenticNet Group on Knowledge Graph-based Retrieval-Augmented Generation (RAG).
- Explored multimodal RAG, financial-domain retrieval, and structured retrieval techniques for improving reasoning and explainability in LLM-based systems.

Systems Engineer Jul 2025 – Jan 2026
Lutions Connect (Professional Networking & Chat Platform)

- Designed and implemented a prototype secure messaging architecture with client-side end-to-end encryption (E2EE) to ensure user data confidentiality.
- Developed an offline-first synchronization mechanism enabling reliable communication under intermittent network conditions.
- Built a cross-platform beta client integrating real-time messaging, encrypted local storage, and cloud synchronization.

LEADERSHIP AND RESPONSIBILITIES

Technical Head Jan 2025 – Present
Adani University Robotics Club

- Trained 100+ students on the Firebird V platform, supporting participation in national-level robotics competitions.

Team Leader Aug 2024 – Mar 2025
e-Yantra Robotics Competition (IIT Bombay)

- Led a student team through complex problem-solving challenges to achieve National Semifinalist status, placing in the Top 10 teams across India.

ACHIEVEMENTS AND CERTIFICATIONS

- **Rank 1 (National Winner)**, "AI for All" — Physical AI Hackathon, organized by Qualcomm (2026).
- **Selected Industry Exhibitor**, invited by Qualcomm to demonstrate "SafeGuard-AI" at the India AI Impact Summit 2026.
- **National Semifinalist**, e-Yantra Robotics Competition (IIT Bombay), 2025.
- Certificate of Merit — Basics of Embedded Systems and Robotics, e-Yantra Lab Setup Initiative (eLSI), IIT Bombay; Score: 99/100.

PUBLICATIONS

- **Analyzing Indian Stock Markets through Correlations: Comparative Insights.** *Proceedings of the International Conference on Infrastructure Development and Sustainability (ICIDS 2025)*, Atlantis Press / Springer Nature.
  DOI: 10.2991/978-94-6239-685-2_13
  Published First-Author Conference Paper.

TECHNICAL SKILLS

Programming: Python, C, Embedded C, Java
AI / Machine Learning: Machine Learning, Deep Learning, NLP, LLMs, Generative AI, RAG, Knowledge Graphs, Embeddings, Anomaly Detection, Model Evaluation
AI / Data Tools: NumPy, pandas, scikit-learn, matplotlib, networkx, Sentence Transformers, Hugging Face
RAG / Backend / Cloud: Pinecone, Supabase, PostgreSQL, FastAPI, Docker, Google Cloud Platform, Vertex AI, Cloud Storage
Systems Engineering: Git, GitHub Actions, Offline-first Architecture, End-to-End Encryption, Socket.IO, System Architecture Design
Robotics / Edge AI: TensorFlow Lite, ROS 2, Gazebo, PID Control, PWM-based Motor Control, Embedded Systems Fundamentals