Rushali Mohbe

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EDUCATION

Northeastern University **Sept 2023 – May 2025**
Master's in Artificial Intelligence, GPA: 3.958/4.0 *Boston, Massachusetts*
Thesis: LLM Unlearning Evaluation using Knowledge Graphs, *Advised by Dr Samuel Scarpino*

Ramaiah Institute of Technology **Sept 2016 – May 2020**
Bachelor's in Computer Science and Engineering, GPA: 9.39/10 *Bangalore, India*

EXPERIENCE

Institute for Experiential AI, Northeastern University **Sept 2023 – May 2025**
Research Assistant *Boston, Massachusetts*

- Designed an Extract, Transform and Load (ETL) pipeline processing 100,000+ WHO/ProMED outbreak alerts, enabling efficient Large Language Model (LLM) fine-tuning and achieving 92% accuracy in outbreak significance detection.
- Built a Retrieval-Augmented Generation (RAG) system, enhancing LLM output relevance by 60% and reducing hallucinations by 80%.
- Developing an LLM-based simulation system for pandemic preparedness, generating policy relevant outputs to support real-time decision-making.

Indian Institute of Science **Aug 2020 – June 2023**
R&D Engineer *Bangalore, India*

- Architected a low-latency, scalable teleoperation system using SQL, ZMQ, FastAPI, and WebSockets; achieving 350ms average latency for real-time robot control across continents.
- Engineered a privacy-preserving face anonymization pipeline with 3D avatar rendering, preserving 95% of facial expression data.
- Developed a viseme detection ML model that improved avatar expression fidelity by 75% and boosted user experience ratings by 40%.

PROJECTS

LLM Unlearning Evaluation using Knowledge Graphs **Sept 2024 - May 2025**

- Designed a framework to evaluate LLM knowledge retention and alignment post unlearning using knowledge graphs, graph distance metrics and entity resolution; leveraging NetworkX and Neo4j for fact verification and quantifying memory retention and information leakage.

Tenant Rights Legal Chatbot for Eviction Defense **Sept 2024 – Dec 2024**

- Developed a GenAI legal chatbot integrating legal knowledge into structured LLM responses using Python, FastAPI, React, Redis, LangChain, FAISS, and GPT-4o; helping tenants interpret eviction notices and improving guidance accuracy by 60%.

Interpretable Deep Learning for Time-Series Heart Health Analysis **Sept 2023 - Dec 2023**

- Applied LIME to analyze feature importance in CNN and LSTM models for heart congestion prediction on ECG data, showing 68% alignment in top features and 100% in top-two features.

PUBLICATIONS

LLM Unlearning EKG: Evaluations using Knowledge Graphs **Dec 2024**
19th Women in Machine Learning Workshop @ NeurIPS 2024 (Peer-reviewed)

An Autonomous Mobile Robot based Tele-Presence System with Augmentation **Mar 2023**
ICRA 2nd Workshop: Toward Robot Avatars (Peer-reviewed)

SKILLS

Programming: Python, C++, Java, SQL, JavaScript, Flask
ML Libraries: PyTorch, TensorFlow, Keras, Transformers, LangChain, NLTK
Tools/Platforms: Docker, Git, AWS, Azure, ROS, OpenCV, Neo4j
Concepts/Techniques: Generative AI (GenAI), LLM Alignment, Model Evaluation, Prompt Engineering, RAG Pipelines, AI Safety, Model Interpretability, NLP, Deep Learning, Algorithms and Data Structures

INTERESTS

Nail art, Digital art, Boxing, Volleyball, Baking, Gardening, Aerial Silks, Hula hooping.