Ramsha Khan

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About

A final year bachelor's student with a strong interest in ML research. My study focuses on foundational topics spanning **machine learning**, **optimization**, **multilingual NLP**, and **reinforcement learning**. I have been focusing on **language modeling** and efficient **post-training techniques** including **policy optimization** algorithms.

My aim is to build **safe** and **explainable** intelligent systems that understand and interact effectively with complex environments.

Education

University of Mumbai, B.E in Computer Engineering — July 2023 – May 2026

- CGPA: 9.0/10.0
- **Coursework:** Machine Learning, Natural Language Processing, Big Data Analytics, Quantitative Analysis.

Technical Diploma in Computer Engineering — Aug 2020 – June 2023

- CGPA: 9.1/10.0
- **Coursework:** Foundations of Programming, Operating System, Computer Networks.

Experience

Data Analytics Intern, PrepInsta Technologies - Remote — Jan 2024 – Apr 2024

- Engineered data preprocessing pipeline for 8+ datasets using Python and SQL, reducing data inconsistencies by 90% and standardizing analysis-ready datasets.
- Performed in-depth exploratory data analysis to identify key trends and patterns that lead to actionable business insights.
- Recreated World Bank data visualization, following Sir Hans Rosling's style, showcasing data storytelling expertise.
- Developed an interactive Air Quality Analysis dashboard using Tableau, incorporating dynamic filters and diverse visualizations for comprehensive data storytelling. View Dashboard

Projects

FinetuneX — github FinetuneX

- Built FinetuneX, a modular from scratch framework for fine-tuning LLMs with custom architecture component following model technical reports.
- Implemented post-training algorithm (Supervised Fine-Tuning) with support for multiple model families (Qwen2.5 and LLama) and optimized training techniques.
- Developed a user-facing platform enabling custom dataset upload, training configuration selection and base vs fine-tuned model comparison.
- Designed the framework to support multiple model architecture and future extensions for various fine-tuning capabilities (LoRA, QLoRA) and instruction tuning based on human preferences for research-oriented experimentation.
- Tools Used: Pytorch, Gradio.

FasalGuru — github FasalGuru

- Engineered an AI-powered agricultural assistant that delivers pest detection, irrigation guidance, fertilizer recommendations, and disease prevention tailored to real-time weather conditions.
- Fine-tuned and deployed a ResNet18 model for classifying 22 crop diseases, integrated with Ollama-hosted LLMs to generate dynamic prevention plans using live weather data.

- Trained Machine Learning models with Scikit-learn for irrigation and fertilizer prediction, enhancing precision farming capabilities.
- Enabled multilingual support across 200+ languages, expanding accessibility for diverse farming communities.
- Tools Used: Pytorch, HuggingFace, Machine Learning, Ollama

Achievements

- Led team to third place in MegaHack, a national-level hackathon at SJCEM, achieving a podium finish among 80+ teams.
- Secured 1st place among 100+ participants in Technical Quiz, demonstrating strong problem-solving and technical expertise.
- Earned Runner-Up in Code-a-thon, a competitive programming contest with 100+ participants, showcasing coding proficiency.
- Finalist in Technothon, an intercollege hackathon, demonstrating technical innovation and collaboration under tight deadlines.

Position of Responsibility

- As a Core Technical Member of Codecell, Rizvi College of Engineering, actively collaborated with the team to coordinate and enhance technical events, workshops, and hackathons, fostering a technology-driven culture and driving innovation across the campus.

Technologies

Languages: Python, C++

Framework/Libraries: PyTorch, Tensorflow, Huggingface, scikit-learn, Docker

Technical Skills: Exploratory Data Analysis, Natural Language Processing, Machine Learning, Deep Learning, Reinforcement Learning, Generative AI (LLM, VLM)