Violina Doley

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EDUCATION

National Institute of Technology Karnataka, Surathkal Dec 2021 - Apr 2025
B.Tech in Computer Science and Engineering
(with Focus Area in Artificial Intelligence and Machine Learning)

TECHNICAL SKILLS

Languages	Python, C++, SQL
Frameworks/ Libraries	Tensorflow, Keras, Scikit-learn, Flask
Tools and Technologies	Pandas, NumPy, AWS, VertexAI, Google AI Studio, Git, PostMan
Relevant Courses	Artificial Intelligence, Machine Learning, Deep Learning, Database Systems, Computer Vision, Digital Image Processing, Object Oriented Programming

WORK EXPERIENCE

SuperKalam (YC W23) - AI Research Intern Aug 2024 - Sep 2024

- Working on **Advanced Prompt Engineering** for evaluating answers of 10+ subjects of competitive examinations like UPSC. Developed multiple prompting templates for **LLM as a Judge** evaluator for state-of-the-art automated grading.
- **LLM finetuning** for UPSC subject domains, incorporating **parameter optimization** and **RLHF** concepts.

IBM India - Data and AI Intern May 2024 - Jul 2024

- Designed a **RAG** chatbot tailored for sales professionals, utilizing **Langchain** and **OpenAI API** to streamline order booking, product recommendations, and sales pitch generation to enhance sales efficiency.
- Integrated the chatbot with **PDF** and **SQL** for data retrieval, enabling real-time customer-specific insights, including order history and promotional offers. Ensured seamless interaction through **Whatsapp** for an intuitive, user-friendly interface.

RESEARCH EXPERIENCE

Indian Institute of Technology, Hyderabad Nov 2023 - Jan 2024
Machine Learning Research Internship

- Implemented **VirConv-L** and **VirConv-T** models on **KITTI** dataset, replicating the original architecture and extending it with novel modifications, including **Squeeze-and-Excitation (S&E)** blocks and **Pointwise Spatial Attention** blocks.
- Achieved a **2%** improvement in **3D Average Precision (AP)** for VirConv-L on the KITTI validation dataset through modifications, showcasing proficiency in experimental design and deep learning model refinement for **autonomous driving**.

Indian Institute of Technology, Guwahati Dec 2023 - Feb 2024
Winter Research Internship

- Implemented **deep transfer learning** on diverse omics datasets to reduce performance gaps and enhance equity among distinct ethnic groups. This represents a significant step in rectifying biases in healthcare artificial intelligence models.
- Enhanced the existing framework through **domain adaptation** methodologies, resulting in substantial improvements for historically disadvantaged groups, validated through rigorous statistical analyses and synthetic data experiments.

PROJECTS

AI for Predictive Maintenance | *GitHub* Dec 2022 - Jun 2023

- Developed an **LSTM** model using time series data with a recall of **89.09%** and an accuracy of **90.96%** to predict hard disk failures and an unsupervised model using **Autoencoder** with an accuracy of **98.73%** to detect anomalies.
- Rendered a responsive webpage using HTML, CSS for frontend and integrated the models using **Flask** on the backend.
- **Technologies used:** Tensorflow, NumPy, Pandas, HTML, CSS, Flask.

PUBLICATION

14th ICCCNT IEEE Conference, Indian Institute of Technology Delhi Nov 2023
Improving Dynamic TDMA for Wireless Sensor Networks

- Improved on the work of C. Benrebbouh, L. Louail, Dynamic TDMA for Wireless Sensor Networks.
- Achieved $\approx 1\%$ lower energy consumption, higher energy efficiency, and increased throughput by considering important factors, incorporating advanced node tracking methodology, and enhancing slot allocation flexibility.