RanjithKumar K. N.

Bengaluru, Karnataka, India | LinkedIn/Ranjith-Kumar | GitHub/Ranjith-Kumar | +91 9008769944 | ranjith.kumar.kn26@gmail.com

Profile Summary

Experienced Data Engineer with a strong focus on machine learning, MLOps, and generative AI. Skilled in developing scalable data pipelines, integrating diverse data sources, and deploying advanced ML models. Proficient in leveraging cutting-edge technologies such as LLMs and generative AI to drive innovative solutions. Demonstrated expertise in EV data analytics, big data technologies, and cloud platforms. Committed to continuous learning and applying data-driven insights to solve complex problems.

Experience

ML Data Engineer | Shodh AI Pvt Ltd| Jaipur, Rajasthan, India

July 2024 – Present

- Architected a scalable data ecosystem that processes petabytes of multimodal data, enabling breakthrough performances in our LLM training.
- Pioneered an end-to-end ML-Ops pipeline that reduced model deployment time by 70% and increased model reliability by 40%.
- Engineered a custom distributed computing framework that optimized our LLM fine-tuning process, resulting in a 3x speedup.
- Developed an innovative data augmentation technique that improved our models' zero-shot learning capabilities by 25%.
- Implemented cutting-edge techniques in efficient transformers and model compression, reducing inference latency by 50% while maintaining accuracy.
- Led the integration of advanced NLP techniques such as few-shot learning, prompt engineering, and chain-of-thought reasoning into our AI products.
- Spearheaded the adoption of explainable AI methodologies, enhancing model interpretability and ethical AI practices.
- Designed a real-time analytics platform for monitoring model performance and data drift, ensuring consistent model quality in production.
- Collaborated with research teams to implement novel architectures like mixture-of-experts and retrieval-augmented generation.
- Mentored junior engineers in advanced ML engineering practices, fostering a culture of continuous learning and innovation.

Data Engineer | Pravaig Dynamics Pvt Ltd| Bengaluru, Karnataka, India

February 2023 – July 2024

- Spearheaded machine learning initiatives within the Electric Vehicle Research & Development team, ensuring seamless integration of ML solutions with EV R&D to enable informed decision-making based on data insights.
- Developed and deployed machine learning models for vehicle data collection and analysis, utilizing technologies such as Kafka for efficient data pipelines.
- Integrated CAN-BUS, Radar, GPS, and camera data into the ML data processing workflow, optimizing data ingestion and analysis.
- Leveraged the ROS2 framework for processing IMU data, ensuring seamless integration and compatibility within the ML data ecosystem.
- Implemented and maintained automated ML workflows using MLOps practices with tools like Jenkins, enhancing overall efficiency and reducing processing times.
- Managed AWS infrastructure to support scalable data storage and computation needs for EV data analytics, developing and maintaining an in-house data warehouse to centralize and optimize data storage, retrieval, and analysis.
- Utilized large language models (LLMs) to enhance natural language processing (NLP) capabilities for analyzing and interpreting vehicle data, contributing to advanced data-driven insights and solutions.

Data Engineer | Vumonic Data Labs Pvt Ltd |Bengaluru, Karnataka, India

October 2022 – January 2023

- Joined Vumonic Data Labs as a Data Engineer to drive data excellence. Design and optimize scalable data pipelines, integrate diverse data sources, and enhance data quality. Collaborate with data scientists to deliver actionable insights and leverage cutting-edge technologies like Hadoop, Spark, and cloud platforms.

Big Data Engineer | Tata Consultancy Services |Bengaluru, Karnataka, India

April 2022 – October 2022

- Developed and maintained scalable data pipelines using Hadoop, Spark, and other Big Data technologies to process large volumes of data, resulting in increased efficiency by 30%. Conducted data analysis and visualization to extract actionable insights, aiding stakeholders in making informed business decisions.

Research Scholar - Data Science | MENMOZHI TECHNOLOGIES |Bengaluru, Karnataka, India

February 2022 – May 2022

- Experience in the space of Software Development in Computer Vision utilizing a mix of customary Image Processing based and current Machine Learning/Deep Learning-based methods.

Skill's

- **Programming Skills:** Python, C++, Java, Machine Learning, Deep Learning (CNN), TensorFlow, PyTorch, Lightning, Scala, R Language.
- **Web Development Skills:** HTML, REACT, CSS, DJANGO, FLASK, FAST API.
- **Database Skills**: SQL, MongoDB, Redis, Hadoop, Hive, NoSQL., Vector DB, Qdrant, Chroma.
- **Miscellaneous Skills:** Git, Ollama, LLamIndex, LangChain, Deepspeed, Docker, Applied Statistics, Power BI, Jenkins, Circle CI, RabbitMQ, Kafka, Ansible, Airflow, ML-flow, AWS, Azure, Multiprocessing, Statistical Modeling, Hypothesis Testing, Clustering, ETL, Object Detection, NLP, NMT, LLM, LLMops, RAG, Generative Ai.
- **Soft Skill:** Time Management, Teamwork, Problem-solving, Documentation, Scum, Meeting and Engaging Presentation.

Education

St. Joseph's University, Bengaluru
MSc, Big Data Analytics, 2020 – 2022

Sheshadripuram Collage, Bengaluru
Bachelor of Computer Applications, 2016 – 2019

Project's

A study on dog emotion recognition using deep learning techniques (AIP (American Institute of Physics) Recognized):

The purpose of this research was to determine if a deep learning system can classify various facial emotion classes in dogs, such as happiness, sadness, anger, and neutral. For this, we proposed three different convolutional networks. The findings prove that, when compared to the other models, the suggested model MBCC-CNN outperforms in terms of facial expression recognition in dogs. Link to paper: AIP Paper link

Product-Photography-with-Generative-AI:

Developed an innovative background change generator for product photography using the FastSAM model and the Stable Diffusion method. This project involved integrating these models into a seamless pipeline, designing and implementing algorithms for accurate background segmentation and image generation, and optimizing the code for performance and scalability. Project link: Proj. link

Math Solver with Retrieval-Augmented Generation (RAG) using Pythia LLM

Developed a sophisticated math solver utilizing Retrieval-Augmented Generation (RAG) with the Pythia Language Model (LLM) to enhance mathematical problem-solving capabilities. This project entailed building a modular codebase from scratch using Hugging Face, focusing on fine-tuning the Pythia model for improved accuracy and reliability. Project link: Proj. link

Certification's

- Python Data Structures Coursera -- Sept 2021: Link
- The Sparks Foundation Virtual Internship -- October 2021: Link
- Data Analytics Virtual Experience Program: Link
- Data Science using R: Link