Ritesh Manchikanti

Buffalo, NY • 7165203117 • sunitharitesh@gmail.com • linkedin.com/in/ritesh-manchikanti

Machine Learning Enginner

As a Computer Science Graduate Student specializing in **Machine Learning** and **Artificial Intelligence**, Focused on research in **large-scale software systems** and technological innovation.
Optimized **Large Language models** in a DevFi internship, addressing complex **business challenges**

SKILLS

Machine Learning : AI, Deep Learning, Dimensionality Reduction, Feature Engineering, Large Language Models, OpenCV, unsupervised Learning

AI FrameWorks : CUDA, Keras, pytorch, Scikit-learn, TensorFlow, Tensor RT

Languages: C, GO, JavaScript, Linux, Python, ReactJS

Software systems : Backend Go Gin, Distributed Systems, Git, kubernetes, MapReduce, REST API's, Software systems

Cloud and Devops : AWS, AWS SageMaker, Azure ML, Continuous Integration(CI), Docker Software

Data Management and Analytics : Apache Hadoop, Apache Solr, Apache Spark, Data Acquisition, Data Analysis, Distributed Database, PostgreSQL, SQL

WORK EXPERIENCE

Devfi • Jun 2023 - Jan 2024

Machine Learning Intern

- Demonstrated strong problem-solving and critical thinking in optimizing the Copy Editing Tool with classifier & error detection features, which increased editing efficiency by 50%.
- Leveraged cloud computing platforms for implementing large-scale optimization techniques like distributed data parallel and FSDP, reducing the Longformer model's training time by 400% from 40 to 8 hours for scalable multi-GPU training.
- Enhanced the tool’s grammar recommendations and error insights capabilities beyond categorization, by incorporating a BERT-based punctuation model, Spacy contextual spell checker.
- Utilized advanced models like Big Bird, Longformer, and BERT to develop a transcript classifier.

Celstream Technologies • Mar 2022 - Aug 2022

Software Intern

- Developed a node and gateway-based data acquisition system for factories, Implemented code for individual data acquisition components on nodes.
- Implemented robust communication protocols between nodes and the master gateway, establishing reliable connections for real-time data relay to the cloud.
- collaborated across teams, contributing expertise in both hardware and software and actively engaged in the data science team, focusing on data mining and predictive analysis using machine learning algorithms to derive meaningful predictions and insights.

EDUCATION

MS in Computer Science

University At Buffalo The State University Of New York • Buffalo • GPA: 3.5 • Aug 2022 - Dec 2023

Courses: Machine Learning, Reinforcement Learning, Algorithms, Information Retrieval, Operating Systems, Distributed Systems, Blockchain Development.

BTech in Electronics and Communication

PES University • Banglore • GPA: 8 • Aug 2018 - May 2022

Courses: C, C++, Machine Learning, Pattern Recognition, Digital Image Processing, DSA, Computer Networks, Probability and Statistics, Mathematics (I, II, and III).

PROJECTS

Distributed Systems

- Developed a Map/Reduce library in Go for distributed computing and to understand fault tolerance in distributed systems, featuring both sequential and distributed modes for executing map and reduce tasks.
- Implemented the Chandy-Lamport algorithm for distributed snapshots on a token-passing system, ensuring FIFO ordering and capturing the state of processes and their incoming channels.
- Built a fault-tolerant key/value storage system using the Raft protocol, focusing on leader election features to manage replicated state machine protocols and ensure log consistency across replicas, solidifying my knowledge of robust system designs and architectural patterns of large-scale software applications.

Multi-topic Information Retrieval Chatbot

- Engaged in the development of Conversation Bots, utilizing my expertise in analyzing both structured and unstructured data, including text and time series, to develop custom models for specific data types.
- Data undergoes pre-processing, entailing stop word removal and lemmatization, proceeded by creating an inverse index for generating relevant responses.
- Adeptly addressed prevalent challenges such as data sparsity and ambiguity in the domain by employing diverse techniques, including stemming and synonym expansion.

Optimal Beam-former Design for mm-wave

- Introduced machine learning Methods to beamforming, enhancing beamforming performance and signal processing quality.
- Developed an optimal analog beam-former through a fully connected feed-forward neural network.
- Utilized a setup with one transmitter and two receivers to address interference challenges in multi-user environments.

Reinforcement Learning

- Utilized deep reinforcement learning in GridWorld to solve advanced navigation problems.
- Addressed various RL challenges in different environments compared the effectiveness of algorithms like Naive DQN, DQN, and Double DQN.
- Applied Q-learning in a Multi-Agent Reinforcement Learning setting for enhanced decision-making.