

Ritesh Manchikanti

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Skills

Machine Learning & AI Frame Works:

AI, Deep Learning, Dimensionality Reduction, Prompt Engineering, Large Language Models, CUDA, Pytorch, Tensor RT, Open CV, Open API, HuggingFace Models.

Software Systems & Languages:

Go Gin Backend, Distributed Systems, RAFT, Fault tolerance Systems, Map Reduce, REST API's, Python, C, Go Lang, C++, SQL, HTML, JavaScript, Bash, Solidity, Reactjs.

Data Management and Cloud:

Apache Hadoop, SOLR, Postgres SQL, Mongo DB, AWS, AWS SageMaker, Azure ML, Docker, Kubernetes, Continuous Integration(CI).

Experience

Devfi Jun 2023 - Present

Machine Learning Intern

NLP, BERT, DDP, LLM's, Gen AI

- Was part of a team developing a revolutionary Copy Editing Tool for a publishing house. specializing in training and fine-tuning advanced models like Big Bird, Longformer, and BERT to create a transcript classifier based on editing complexity.
- Employed distributed data parallel and FSDP as parallel training techniques cutting Long-former model training time from 40 to 8 hours (400% decreased).
- Enhanced the tool's capabilities beyond categorization, incorporating a BERT-based punctuation model, Spacy contextual spell checker, and a grammatical error pipeline. The result was a meticulously refined manuscript, showcasing the impact of intern-driven innovation.

Celstream Technologies

Aug 2021 - Jan 2022

Software Intern

Pytorch, C, Python, CUDA

- 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 both hardware and software expertise, and actively participated in the data science team, integrating machine learning algorithms for advanced data analysis.

Projects

Multi-topic Information Retrieval Chatbot

Python, Apache Solr, GCP, Angular, Flask, HTML

- Conceived and constructed a chatbot built upon Angular and Flask aimed at efficiently managing user inquiries by utilizing a vocabulary gleaned from scraped data across various subreddits.
- 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

Matlab, Tensorflow, ANN, Git

- Introduced machine learning methodologies to beamforming, diverging from conventional MATLAB-based approaches. Which resulted in elevated 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.

Education

University at Buffalo, The State University of New York

Aug 2022 - Dec 2023

Masters in Computer Science

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

PES University

Aug 2018 - May 2022

Bachelors in Electronics & Communication Engineering

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