SYED ASHFAQ N

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PROFESSIONAL EXPERIENCE

Machine Learning Engineer   Nov 2019 - June 2022
I-Exceed Technologies Pvt Ltd   *Bengaluru, India*

- Designed Intent and **Named Entity Recognition Model** for business use case to build **Chatbot** and **Search Engine**. Project involved implementation of natural language processing, machine learning algorithms to train, evaluate and prediction of intent and entities from the text data.Performed **Text Classification** and **Sentiment Analysis**. Created multi stage NLP pipeline using Azure Cognitive services.

- Designed **Information Retrieval Engine** for business use case as an onboarding solution. Understanding and parsing multilingual texts and creating tools to classify. Project involved retrieving data from the documents using image pre-processing then detecting data using **Optical Character Recognition** engine and **YoloV4**.

- Designed **Face Recognition** and **Matching Model** for the business use case as an onboarding solution. Project involved in detecting face from the document using pre-defined models of **dlib, mtcnn** and matching with selfie capture image for verification using predefined model face-net. This project has been implemented ad-hoc as needed in support of organizations business strategy.

- Retrieval Augmented Generation Based Question and Answer[Q & A] Chatbot Application | Python. Given a dataset of 5 research papers, parsed the content (text, images, tables) and indexed the parsed content into a vector database ChromaDB. Built a chat application that allows users to have interactive conversations with the content of five research papers. The application utilized the GPT-3.5 model for retrieval augmented generation **(RAG)**. Allow users to interact with the research papers' content through the chat application.Provides a document summarizing the parsed content, including key findings. Evaluate LLM and RAG using Langchain and Huggingface.

- Built tools for Data Augmentation using Python and created test scripts for different scenarios. Design Data Pipelines for machine learning services using **Airflow**.

SKILLS

Languages	Python, R, SQL, C++
Framework/Libraries	Tensorflow, Keras, Django, PyTorch, Scikit-learn, Spacy, Numpy, Pandas, XGBoost, OpenCV, CUDA, NLTK, FastAPI
Data Visualization/Analytics	Matplotlib, Seaborn, Tableau
Data Stores	MySQL, MongoDB, PySpark, kafka
Devops/MLOps	AzureML, Docker, Kubernetes, Kubeflow, Github Actions, Airflow

PROJECTS

Fine Tuning and Deploying LLM's | Python,AWS, Docker
- Fine-tuned **Llama 7B** on **AWS Trainium** and Deployed **Llama 7B/13B/30B** on **AWS inferentia2** with **Amazon SageMaker**.
- Deployed **Stable Diffusion XL** on **AWS inferentia2** with **Amazon SageMaker**.
- Fine-tuned **Falcon 180B** with **DeepSpeed ZeRO, LoRA, QLoRA Flash Attention**.
- Trained and Deployed **Mistral 7B** with Hugging Face on Amazon SageMaker.
- Deployed **Idefics 9B 80B** on Amazon SageMaker.
- Deployed **Flan UL2-20B** on Amazon SageMaker.
- Trained and Deployed **Mistral 7B/30B** with Hugging Face on Amazon SageMaker

Generating Match Summary With NMT, Seq2Seq Attention and Transformer Networks | Python, Keras
- Generated textual summaries of football(soccer) match from game event vectors using **NMT** framework.
- Built a **Seq2Seq** model with attention to summarize text and improving the summarization with **BEAM** search.

- Addressing beam search issues with length normalization and measuring the performance with **ROGUE** metrics which increase the BLEU score.

CUDA Programming to achieve data parallelism and model parallelism | CUDA, PyTorch
- Programming NVIDIA GPU using OpenACC and CUDA
- Worked on CUDA Toolkit: Libraries, Tools, Profilers and Debuggers
- Worked on data and model parallelism and syncing of GPU's to update weights

Synthesized Filamentary Structured Images Using GAN's | Python, PyTorch
- Synthesizes filamentary structured images as retinal fundus images and neuronal images.
- Works well with very few training example instead of large dataset and capable of synthesizing diverse images from same ground truth

EDUCATION

VIT University   *Vellore, India*
B.Tech Electrical and Electronics Engineering   2013 - 2017

CERTIFICATIONS

TigerGraph Certified Associate

Neo4j Certified Professional

GPU Programming Specialization Audit - John Hopkins University

Weights and Biases Certified MLOps-CI/CD, Model Deployement

Databricks Generative AI Certification