Ali Haider

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EDUCATION

Forman Christian College University May 2025
Major: BSc. Computer Science, Minor: Mathematics

Courses: Linear Algebra | Differential Equations | Multivariate Calculus | Numerical Computing | Introduction to Artificial Intelligence | Introduction to Deep Learning | Blockchain Technology | Data Structures and Algorithms | Design and Analysis of Algorithms | Theory of Automata | Database Systems | Object Oriented Programming

WORK EXPERIENCE

ML/AI Technical Writer (Research)
viso.ai Jan 2024- Present

- Wrote over 30 in-depth research articles on cutting-edge Deep Learning models, particularly on Computer Vision.
- Covered a wide range of architectures including YOLO, MobileNet, Inception, FCOS, Neural Style Transfer, StyleGAN, CycleGAN, DensePose, among others.
- Engaged in a comprehensive writing process involving detailed review of research papers, thorough analysis of model architectures, and understanding of underlying mathematical principles.
- Gained extensive theoretical knowledge of Deep Learning architectures and their practical applications.

Full Stack Web Development
Freelance Web Developer Aug 2022- Nov 2023

- Developed full-stack applications for clients using React for reusable UI components, Next.js, and Node.js for routing. Utilized MongoDB and Firebase for user authentication and database management. Designed and implemented RESTful APIs.
- Utilized Git version control system for project management and versioning.
- Created an inventory management system for a flower shop, including tracking inventory levels, managing stock, and generating business reports.
- Created an online booking application for searching and booking flights, hotels, and car rentals, with user reviews and payment options.

PROJECTS

Object Detection
- Developed a real-time object detection and classification model using YOLO, achieving a 92% accuracy rate in object identification. Automated attendance system to track employee arrivals and departures.

Image Classification
- Implemented a TensorFlow-based image classification model with an accuracy of 89% for categorizing objects into predefined classes

Pose Estimation
- Applied the DeepLab model in TensorFlow for 3D human pose estimation, achieving a 90% accuracy in body position analysis, and enhancing precision for applications requiring detailed pose tracking.

Text Generation
- Designed a text generation model using LSTM to produce Shakespearean-style poetry.

Siamese Network
- Constructed a Siamese network with a custom loss function (contrast loss) to compute similarity scores between image pairs, reaching an 85% accuracy in similarity matching.

Variational Autoencoders (VAEs)
- Developed a VAE model, generating new similar data samples with high fidelity.

Generative Adversarial Networks (GANs)
- Developed a GAN model incorporating diffusion processes to generate realistic facial images.

Fine-Tuned LLMs
- Fine-tuned a language model using Retrieval-Augmented Generation (RAG), LangChain, and vector databases, resulting in increased contextual understanding and relevance for the LLMs, the dataset given was a book.

CERTIFICATIONS

DeepLearning.AI TensorFlow Developer Professional Certificate | Coursera
- Convolutional Neural Networks in TensorFlow: Managed real-world image data with over 100K images. Prevented overfitting using data augmentation and dropout techniques.
- Natural Language Processing in TensorFlow: Tokenized and vectorized text data. Applied RNNs, GRUs, and LSTMs to generate new text from trained models.
- Sequences, Time Series, and Prediction: Solved time series forecasting problems using RNNs, LSTMs, and ConvNets. Built a sunspot prediction model from real-world data.

TensorFlow: Advanced Techniques Specialization | Coursera
- Custom Models, Layers, and Loss Functions with TensorFlow: Built models with Functional and Sequential APIs. Utilized lambda functions for custom functionality. Created custom loss functions like contrastive loss for Siamese networks and developed ResNet and VGG from scratch using custom model class.
- Custom and Distributed Created Tensor objects and performed mathematical calculations using it. Differentiated between eager and graph modes using GradientTape for custom training loops. Implemented distributed training on multiple GPU and TPU cores in Google Colab.

Operationalizing LLMs on Azure | Duke University | Coursera
- Gained proficiency in Azure and its AI services. Deployed pre-trained LLMs on Azure and consumed them using APIs. Performed prompt engineering using semantic kernel and LangChain. Implemented Retrieval-Augmented Generation (RAG) in Azure search. Automated model deployment with GitHub Actions workflows. Learned to create and utilize vector databases.

SKILLS

Python | TensorFlow | NumPy | Pandas | Matplotlib | Keras | OpenCV | Deep Learning | Computer Vision | NLP | Tensor manipulation | CNN | RNN | LSTM Transformers | GAN | VAE | Data Preprocessing and Cleaning | Feature Engineering | Data Pipelines | Problem-Solving | Critical Thinking | Writing | AWS | Azure | Git GitHub | React | Node.js | Django | JavaScript | MySQL | MongoDB | HTML5 | CSS | WordPress