Karthik reddy Kanjula

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Professional Summary

Hello there! I'm Karthik, with a Master's in Computer Science, specializing in machine learning from West Chester University. My toolkit includes Python and other languages. I'm well-acquainted with the symphonies of TensorFlow and PyTorch.

Beyond the academic journey, I've delved into practical problem-solving scenarios. From enhancing agriculture practices to decoding the complexities of the brain in neuroscience with Machine Learning, I bring a versatile set of skills to the tech table.

Now, picture this: I'm eager to infuse my enthusiasm and skills into your dynamic team. Impactful projects? Count me in! Relocation? Sure thing! Let's connect and explore how I can contribute to your tech vision.

Skills

Languages: Python, C++, MATLAB, R Programming, JavaScript, Bash, HTML, CSS
Frameworks: Tensorflow, Pytorch, Keras, OpenCV, Caffe, Scikit-Library, Pandas, NumPy, Tableau, Matplotlib
Databases: MySQL, NoSQL, MongoDB, Vector Database
Tools/Deployment: Apache Spark, REST API, Git, Docker, Kubernetes, AWS, GCP, Postman, Pytest, Ray
NLP: Prompt Engineering, Langchain

Experience

Junior Data Scientist, MindScripts LLC – Remote, USA Sep 2023 – Current

- Achieved 81.4% accuracy by implementing **(RAG)** using ChromaDB across custom textual datasets.
- Optimized accuracy by combining **Similarity Search** and RAG methodologies, leveraging parameterized **K-NN search** for precise data processing

Graduate Assistant, WCUPA - Information services – West Chester, PA Nov 2022 – May 2023

- Built **Recommendation engine** using collaborative filtering that resolved help desk issues with 95% accuracy.
- Generated interactive visualizations of survey data to extract actionable insights from faculty, staff, and student feedback, enabling **Data-driven decision making** and improved service delivery.

Research Intern, Hewlett-Packard Enterprise – Remote, Singapore Dec 2020 – Mar 2021

- Developed real-time ball tracking with Simple RCNN **computer vision model**, with 90% accuracy on test data.
- Optimized Apache Spark **data pipelines** on large data-sets, trained CNN model to 15 FPS inference speed.

Machine Learning Intern, REVA UIIC – Bangalore, India May 2020 – Aug 2020

- Developed **Deep Neural Network** using OpenCV to classify fruit ripeness, deployed on Firebase with TFlite.
- Implemented AWS pipeline for **data management** on S3, Ground Truth, model training with SageMaker.

Research Assistant, REVA University – Bangalore, India Sep 2019 – Apr 2020

- Developed machine learning model using novel dual-mode EEG **signal processing algorithm** to detect epilepsy seizures, achieving 97.32% accuracy on 345 clinical samples.

Projects

Healthcare Resources Application

- Integrated **Metaphor API and LLM OpenAI API**, boosting the healthcare aggregator's neural search capabilities and achieving a 30% increase in search accuracy.
- Includes user-centric features, such as the Best Hospital Finder and Where to Buy Drugs, resulting in a 40% improvement in location-based searches for top hospitals and drug stores.

Customizable LLM Search

- Developed a web application that uses Langchain and OpenAI's GPT-3.5 API to allow users to upload files and perform **natural language search** on the content.
- Implemented advanced language processing techniques, enabling users to interactively search for information, receive informative responses, and improve user experience.

Real-time Skin Cancer Detection

- Cut inference time to 0.1s with **Edge optimization techniques**, Developed RESNET 50 custom model.
- Designed a prototype with minimal architecture and crawled the web to provide Geo-spatial functionalities in the application.

Distributed Swarm Intelligence

- Created a **distributed application** that provides users with a visual representation of how the Particle Swarm Optimization (PSO) algorithm works..
- Leveraged Ray, an open-source framework that facilitates distributed computing, efficiently distributes workload across multiple worker computers, reducing the processing speed by 30%.

Robustness Testing for Computer Vision

- Developed pipeline using **GANs and DBSCAN** to identify CV model failures, extracted dominant features.
- The misclassified samples are clustered with correctly classified samples using DBSCAN to study the reason of failure. The clustered group is expressed into multiple readable features and the dominant feature is selected as correction filter.

Application of Unsupervised Algorithm for DWC using IoT

- Recorded sensor data with Arduino UNO which was stored into a local database employing a process called **"Data Acquisition"**, then implemented Time-series visualization for Pattern Recognition.
- Achieved 25% improvement in nutrient efficiency and 15% increase in plant germination rate using k-means clustering.

People counting & retail analytics using edge AI

- Developed **real-time human detection tracker** using edge AI, optimizing retail stores with Tableau analytics.
- Deployed the model using OpenVINO, used OpenCV for Video analysis and people count, results in 40% more sales than usual.

Education

West Chester University of Pennsylvania – Master of Science in Computer Science — May 2023

REVA University – Bachelor of Science in Computer Science Engineering — June 2021

Publications - Click on the title to access paper

Application of Unsupervised Algorithm for Deep Water Culture using IoT

Epilepsy Seizure Prediction Model with Dual Mode EEG Overlapping Technique Using Neural Network

People counting system for retail analytics using edge AI

Distributed Swarm Intelligence

Achievements & Certifications - Click to verify

Received acceptance for the paper "An Edge Internet of Things Framework for Machine Learning based Skin Cancer Detection Models" at **ICMLA 2023**.

Machine Learning Specialization - DeepLearning.ai

Databricks Lakehouse Fundamentals - Academy Accreditation