ANANTH NATARAJAN

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Summary

AI/ML developer specializing in Retrieval-Augmented Generation (RAG) systems and generative AI, with expertise in designing scalable knowledge bases and deploying APIs for seamless integration. Skilled in image processing tasks like fake image detection, segmentation, and proxy detection in video analytics. Proficient in optimizing model architectures with TensorFlow, Keras, Hugging Face, and FAISS, ensuring efficient, accurate, and production-ready solutions for diverse applications.

Experience

AI/ML Developer

Canvendor Software Solutions Pvt Ltd • Nagercoil, Tamil Nadu.
04/2023 - Present

Knowledge Base Development
- Built a **Retrieval-Augmented Generation (RAG)** system using **LangChain** to retrieve and generate contextual responses from large datasets efficiently.
- Enhanced query processing to improve system accuracy and relevance in knowledge retrieval tasks.

Application Development
- Designed and deployed scalable applications with **Streamlit** and **FastAPI**, transitioning scripts into modular and reusable components for maintainability.
- Leveraged **Pydantic** for data validation and serialization, ensuring robust API functionalities.
- Optimized deployment workflows and ensured production readiness of applications on **IIS servers**.

API and Backend Systems
- Developed and optimized **RESTful APIs** to ensure seamless integration with external systems, improving data flow and backend performance.
- Implemented **CORS policies** and optimized endpoint performance for secure and production-ready APIs.

NLP Solutions
- Designed and implemented **NLP techniques,** such as text summarization, entity recognition, and language modeling, to enhance chatbot and text-processing systems.
- Built and optimized customer service and healthcare chatbots, integrating secure authentication and efficient database management to enhance user experience.

Medical Systems Development
- Developed solutions for **electronic medical record (EMR)** systems, focusing on summarization, coding, and reporting to streamline workflows in healthcare operations.

Database Management
- Managed structured and unstructured data using **SQL** and **vector databases**, supporting efficient retrieval and analysis for applications.

Team Collaboration
- Collaborated with cross-functional teams to identify requirements, troubleshoot issues, and deliver impactful solutions aligned with organizational goals.

Machine Learning Engineer

Zonduo Technologies • Nagercoil, Tamil Nadu.
06/2021 - 04/2023
Research Algorithm Development & AI Solutions

- Implemented and optimized advanced **deep learning algorithms** to support scientific research and enhance model performance.
- Collaborated with researchers to translate complex **theoretical models** into efficient, scalable, and production-ready code.
- Utilized **machine learning techniques** to improve algorithm efficiency, optimizing models for real-world applications.
- Conducted in-depth **data analysis** to extract actionable insights, driving improvements in model accuracy and performance.
- Contributed to the design and development of innovative **AI solutions** tailored for machine learning applications.

Skills

Python, FastAPI, Streamlit, Pydantic, LangChain, Groq Cloud, Docker, Ollama, IIS Servers, TensorFlow, Keras, Hugging Face, PhiData, FAISS, Machine Learning, Deep learning, Large Language Models, Fine Tuning

Education

B.E Automobile Engineering

Hindusthan College of Engineering and Technology • Coimbatore, Tamil Nadu.
05/2018

Certificates

PG Diploma in Artificial Intelligence and Machine Learning, by Simplilearn collaboration with Purdue University and IBM