Sanjay Prabhakar

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Education

Northeastern University **GPA-3.87** **Sept. 2022 – Dec. 2024**
Master of Science in Artificial Intelligence (Khoury College of Computer Sciences) *Boston, Massachusetts*
Relevant Coursework: Large Language Models, Robotic Science Systems, Foundations of Artificial Intelligence, Computer Vision, Machine Learning

BMS Institute of Technology **GPA-3.3** **Aug. 2018 – Jun. 2022**
Bachelor of Engineering in Computer Science *Bangalore, India*
Relevant Coursework: Artificial Intelligence & ML, Advanced Engineering Mathematics, Data Structures, Algorithm Analysis, Computer Graphics

Skills

Programming Languages: Python, C++, C, Java, SQL
Vision Technologies: Computer Vision, Stereo Vision, 3D Reconstruction, Visual-Inertial Odometry, Semantic Segmentation, Object Detection
ML/DL Frameworks: PyTorch, TensorFlow, Keras, Scikit-Learn
Hardware: DepthAI, NVIDIA Jetson, NVIDIA Xavier, NVIDIA Orin
Other: Docker, Kubernetes, AWS SageMaker, Argo CD

Experience

Agot AI **August 2023 – December 2023**
Machine Learning Intern *Pittsburgh, Pennsylvania*
- Developed and launched an innovative food waste management product using ML algorithms for data forecasting and computer vision, resulting in a 50% reduction in food waste. Focused on edge deployment.
- Developed an action recognition pipeline using Generative and Discriminative Learning Models for restaurant behavioral analysis.

Agot AI **May 2023 – August 2023**
Computer Vision Intern *Pittsburgh, Pennsylvania*
- Optimized segmentation models with Nvidia TAO Deepstream, improving IOU by 20% and deployed on Nvidia Xavier & Orin.
- Integrated visual language models such as **GPT-4V** and **LLaVa** into computer vision pipelines, enhancing complex scene interpretation accuracy by 30%.
- Trained transformer-UNet based segmentation and detection models on AWS Sagemaker and deployed on Kubernetes cluster using Argo CD and Docker for automated deployment.

Green Robot Machinery (Grobomac) **June 2021 – December 2021**
Computer Vision Intern *Bangalore, Karnataka*
- Developed & deployed real-time depth estimation and object tracking for autonomous cotton-harvesting robots using Python, C++, OpenVino, and DepthAI.
- Evaluated edge devices like Nvidia Jetson series & OAK-D for cost and performance.
- Boosted FPS by 40% with a neural model, reducing compute resources by 50%.

Projects

Real-Time Financial Advice LLM | *Python, Hugging Face, Bytewax, AWS* **March 2024**
- Developed a real-time financial advice LLM application with data ingestion, processing, and real-time inference using Retrieval-Augmented Generation (RAG).
- Implemented Bytewax for scalable data streaming and Qdrant for efficient embedding storage and retrieval, minimizing latency.

Agentic Job Search Tool | *Python, Streamlit, LangChain, OpenAI API, Gemini API, Ollama* **January 2024**
- Built an automated job search tool using Streamlit and LangChain, extracting structured job postings via an LLM agent.
- Implemented Retrieval-Augmented Generation (RAG) for resume-job matching.
- Enabled resume customization by automatically generating LaTeX and PDF outputs from job postings.
- Supported OpenAI, Gemini, and Ollama APIs for flexible LLM-powered search and customization.