Anandha Krishnan H

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Experience

- **Techolution** Hyderabad, Telangana
  Lead AI Engineer *2019 - Present*
  - **Hospital Inventory Management System**: Led the design and delivery of a **$1.3M AI-powered hospital inventory tracking device** as Product Owner for 20+ engineers, driving development of computer vision pipelines (YOLO, PaddlePaddle), visual–language model integration (Claude), achieving **95% accuracy in identifying 750K+ unique catalog products.** Personally traveled to the U.S. to collaborate with clients and conduct on-site hospital visits to ensure deployment readiness and adoption.
  - **MLOps Platform**: Led the development of an internal MLOps platform for low-code model annotation, training, deployment, and testing. Designed auto-scaling clusters with custom job queuing, load balancing, and a distributed training hypervisor, reducing training pod setup time from **3 hours to 3 minutes**. Championed by **100+ projects** within the organization, processing over **10K training jobs and annotating 40M data points** so far.
  - **Face Recognition**: Developed and deployed a face recognition system using Inception-ResNet with TensorFlow Lite quantization, achieving **99.28% accuracy** on validation dataset and real-time performance on Android devices. Optimized CNN-based detection, tracking, and anti-spoofing models for embedded GPUs, delivering **10 ms per frame detection, <1 ms spoofing checks**, and high robustness to illumination variations. Reduced face onboarding time from minutes to seconds while gaining expertise in GPU optimization, Nvidia drivers, and large-scale deep learning training.
  - **Book Translation**: Designed and implemented backend algorithms to interface with Gemini and Claude LLMs, chunking large books for translation into Dutch, French, and Spanish, **achieving a BLEU score of 35** and strong validation from native speakers.
  - **Health Chat Assistant**: Built and deployed a RAG-based assistant using OpenAI + Gemini with Pinecone for a major US nutrition provider, ingesting and indexing their product catalog to power customer queries during a Black Friday launch.
  - **Defect Detection**: Directed the development of a vision-based inspection system with 5+ developers using cobots, 3D/2D high-resolution cameras, and deep learning models (ResNet, YOLO, ViT) to measure medical screws with **0.01mm precision in 15s vs. 2 mins manually**, delivering major cost savings for one of the largest medical manufacturing companies.
  - **Voice Recognition**: Built lightweight CNN/RNN models for speech recognition optimized for microcontrollers (e.g., Portenta H7, STM32), with post-training quantization enabling efficient low-power inference achieving **91.5% accuracy, running at 20 ms on low computer devices** for real-time intent prediction.
  - **Collaborative Robotics (Cobots)**: Engineered an AI pipeline combining 2D/3D vision (YOLO, ViT) and vision–language models with robotic hands, building a Python backend with ROS/serial communication to enable real-time, natural language–driven human–robot interaction.

Education

- **Indian Institute Of Information Technology and Management** Thiruvananthapuram, Kerala
  Master of Science in Computer Science - Machine Learning *2018 – 2020*
- **Amrita Vishwa Vidyapeetham** Coimbatore, Tamil Nadu
  Bachelor of Science in Physics *2015 – 2018*

Projects

- **Raman Cancer Spectra Research**: Collaborated with Toronto Metropolitan University to analyze Raman spectroscopy data from healthy and cancer patients. Developed classical ML and deep learning models to detect cancer presence and classify among 15 body-specific cancer locations, advancing non-invasive cancer diagnostics research. The clinical trials are expected to start with an estimated cancer detection rate of >90%

Technical Skills

- **Languages**: Python, R **Backend**: Flask, Django, Fast API **Cloud**: GCP, Azure **Databases**: MongoDB, Redis, BigQuery, Firestore, Firebase, Pinecone **Gen AI**: LangChain, LangGraph, OpenAI, Vertex AI **AI & ML**: Computer Vision, TensorFlow, PyTorch, STM32CubeAI