VENKATKUMAR RAJAN

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SUMMARY

An AI Engineer with 3 years of experience designing and deploying AI solutions that drive automation, scalability, and business impact.

EXPERIENCE

Generative AI Developer | Senior Executive **Dec 2023 – present**
EXL Service.com(India) private limited *Noida, India (Remote)*

- Solely developed and deployed a real-time, production-grade Generative AI document processing backend leveraging Azure OpenAI, NLP, and computer vision for a U.S. insurance client. Designed a **unified codebase** capable of dynamically extracting multiple document types with minimal prompt updates. Implemented confidence scoring (>95%), automated post-processing archival, logging (local + SQL), and secure key management using **Azure Key Vault**. Integrated **Azure Blob Storage** and **CI/CD pipelines** via Azure DevOps, enabling scalable deployment and maintenance.
- Led healthcare analytics and intelligent document processing (IDP) initiatives for a Fortune healthcare client, implementing solutions with **Azure Document Intelligence**, **Power Apps, Power Automate**, and SharePoint, and developing eAppeal pipelines and GenAI POCs that accelerated claim resolution, reduced manual effort, and improved operational efficiency by **40–60%**.
- Delivered multiple GenAI projects and POCs to showcase value to internal stakeholders and external clients, driving new business opportunities and improving operational efficiency by **25–40%**.

Machine Learning Engineer **Sept 2022 – Oct 2023**
AUGRAY *Chennai, TamilNadu, India (Onsite)*

- **Real-Time Ball Fault Identification:** Designed and deployed a lightweight ball defect detection system for a major sports goods manufacturer using MobileNetV2, optimized for Jetson AGX. Achieved 90%+ accuracy, **reducing QA error rate by 40+% and boosting manufacturing throughput by 3x**.
- **Automated 3D Reconstruction using Generative AI with Photogrammetry and NeRF:** Implemented an automated 3D reconstruction pipeline using combination of traditional and Generative AI approach, achieving **95%** accuracy for non-reflective objects and **70%** for reflective objects.
- **Wall Segmentation with Color Schemes:** Developed wall/floor segmentation model with **80%** accuracy, helping the paint manufacturer automate color preview generation, **cutting designer effort by 50+ hours/month**.
- **Foot Detection and Virtual Shoe Try-On:** Led a virtual shoe try-on project with 10,000+ annotated foot images, achieving **79%** placement accuracy and **reducing customer return rates by 15% in pilot trials**.
- Additionally, Created impactful Generative AI PoCs including **flyer generation, face texture synthesis, and a site-based chatbot**, driving innovation in client engagement and interactive marketing solutions.

SKILLS

- **Programming Languages:** Python, C++
- **AI/ML Frameworks:** TensorFlow, PyTorch, OpenCV, Kornia, librosa, scikit-learn, Gym, Pyspark, Prophet, NetworkX, Mediapipe
- **Generative AI and LLMOps:** LangChain, LlamaIndex, Docling, Groq, Ollama, CrewAI, RAGAS, AutoGen, Phidata, LangGraph
- **Web and Backend Frameworks:** Django, Reactjs, Nodejs, FastAPI, Flask, RestAPI, Streamlit, Gradio
- **Deployment, MLOps and Edge AI:** Azure, AWS, Docker, Kubernetes, Kubeflow, MLflow, Kafka, CI/CD (Azure DevOps, Git), Nvidia Jetson AGX, Raspberry Pi
- **Database, Automation, Visualization and Testing:** MongoDB, MySQL, Power Apps, Power Automate, PowerBI, Tableau, Unittest, Pytest
- **Professional Skills:** Leadership, Project Management, Agile Methodologies, Business Analysis, Problem-Solving, Adaptability

PAPER PUBLICATION

- A Generative Approach to High Fidelity 3D Reconstruction from Text Data[Arxiv][Github]
- Advancing Audio Fingerprinting Accuracy with AI and ML: Addressing Background Noise and Distortion Challenges [IEEE]
- Implementation of PCB Layout using CNC Machine Controlling with Wireless Communication [IRJIET]

CERTIFICATION AND ACCOMPLISHMENT

- **Certification** : Tensorflow Developer, Nvidia Jetson AI specialist, Azure AI, Reinforcement learning, Computer Vision, Generative AI
- **Udacity Nano Degree** : Introduction to Self Driving Car, Self Driving Car Engineer
- **Accomplishment : Kaggle Master**

EDUCATION

- **M.Tech. in Artificial Intelligence and Machine Learning** **Rajasthan, India**
  Birla Institute of Technology and Science, Pilani *Mar 2023 – Apr 2025*
- **B.E. in Electronics and Communication** **Madurai, Tamil Nadu, India**
  SACS MAVMM Engineering College, Anna University *July 2016 – Oct 2020*