

VENKATKUMAR RAJAN

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EXPERIENCE

Generative AI Developer | Senior Executive

Dec 2023 – present

EXL Service.com(India) private limited

Noida, India (Remote)

- 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.
- Developed a scalable AI-based document classification system using Azure OpenAI. New document categories can be added instantly by updating a reference document, no prompt changes needed. Implemented secure logging, post-processing, Azure Key Vault integration, and automated Blob Storage output. Fully deployed through Azure DevOps CI/CD, achieving **>97%** accuracy.
- 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%**.
- Developed multiple Generative AI proof-of-concepts and delivered technical presentations to prospective clients, showcasing applied AI capabilities. Worked extensively in U.S. healthcare revenue cycle management (RCM), with a strong focus on provider analytics and insights.

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
- AI/ML Frameworks:** TensorFlow, PyTorch, OpenCV, Kornia, librosa, scikit-learn, Gym, Pyspark, Prophet, NetworkX, Mediapipe, LangChain, LlamaIndex, Docling, Groq, Ollama, CrewAI, RAGAS, AutoGen, Phidata, LangGraph, MCP
- Web and Backend Frameworks:** Django, FastAPI, Flask, RestAPI, Streamlit, Gradio
- Deployment, MLOps and Edge AI:** Azure, AWS, Docker, Kubernetes, Kubeflow, MLflow, Kafka, Nvidia Jetson AGX, Raspberry Pi
- Database, Automation, Visualization, Security and Testing:** MongoDB, MySQL, PowerBI, Unittest, Pytest, AI Security
- 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 [[IRJET](#)]

CERTIFICATION AND ACCOMPLISHMENT

- Certification :** [Tensorflow Developer](#), Nvidia Jetson AI specialist, Azure AI, Reinforcement learning, Computer Vision, Generative AI, AI for CyberSecurity, AI Security, Self Driving Car
- Udacity Nano Degree :** Introduction to Self Driving Car, Self Driving Car Engineer
- Accomplishment :** [Kaggle Master](#)

EDUCATION

- M.Tech. in Artificial Intelligence and Machine Learning**
Birla Institute of Technology and Science, Pilani
- B.E. in Electronics and Communication**
SACS MAVMM Engineering College, Anna University

Rajasthan, India
Mar 2023 – Apr 2025
Madurai, Tamil Nadu, India
July 2016 – Oct 2020