balagopal n

Data Scientist

PERSONAL INFORMATION

Email
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Mobile
(+91) 9710821388

Total work experience
4 Years 0 Month

Social Link
https://www.linkedin.com/in/balagopal-narayanaswami-96a583221/

KEY SKILLS

Computer Vision

Large Language Model

Artificial Intelligence

Natural Language Processing

OTHER PERSONAL DETAILS

City   Chennai

Country   INDIA

HOBBIES

Reading, Martialarts, Teaching

PROFILE SUMMARY

Experienced Machine Learning Engineer specializing in NLP, Computer Vision, and Generative AI with over 4 years of expertise. Proficient in developing and implementing end-to-end ML pipelines, RAG-based chatbots, and multi-modal AI systems using Python, TensorFlow, PyTorch, and MLOps methodologies. Skilled in cloud deployments (Azure, Docker, Kubernetes) and adept at integrating AI solutions with various databases (SQL, NoSQL, VectorDBs, Neo4j). Demonstrated success in delivering enterprise-grade solutions in NLP (call insights, sentiment analysis, entity extraction), computer vision (defect detection, OCR, ResNet, YOLOv8), and Generative AI (custom chatbots, design automation). Holds certification as an IBM Data Scientist, TensorFlow Developer, and DeepLearning.AI Specialist.

EDUCATION

2018   B.Tech/B.E.
Chennai Institute of Technology, Chennai

2014   XIIth
English

WORK EXPERIENCE

Oct 2023 - Present   Data Scientist
Sulekha

- Developed Generative AI agents to extract insights and automate tasks within enterprise workflows.
- Designed and deployed MLOps-based CV pipelines integrated with YOLOv8 and OCR, enhancing defect detection efficiency .
- Built NLP systems for call analytics including topic detection, sentiment analysis, and entity recognition, generating actionable business insights for multiple clients.

Nov 2021 - Oct 2023   Machine Learning Engineer
Augray

Delivered end-to-end NLP and CV projects from data collection to production deployment. Implemented symbolic AI + DL hybrids for enterprise use cases. Automated deployments with Docker/K8s, reducing operational overhead.

Jan 2017 - Sep 2021   Martial Arts Instructor
Assosiation Of Tamilnadu Taekwondo

Taught martial arts at multiple schools (Don Bosco, CPS, Egmore), training 200+ students. Gained leadership, mentoring, and discipline skills transferable to collaborative engineering environments.

Projects

353 Days

Scalable Call Insights Engine

Designed and implemented a speech analytics pipeline integrating Google Gemini for LLM-driven analysis, Deepgram for low-latency transcription, and AWS Transcribe for scalable speech-to-text processing. Applied advanced prompt engineering and structured output schemas to extract sentiment trajectories, named entities, and topic clusters from customer call data, enabling downstream trend analysis and actionable insights

719 Days

Customizable Generative Chatbot (RAG-based)

Engineered a multi-tenant chatbot platform leveraging GPT-4/GPT-4o for natural language understanding, Pinecone as a vector database for semantic retrieval, and Neo4j knowledge graphs for structured reasoning. Integrated LLM tool-calling capabilities to implement client-specific workflows and business logic, enabling tailored domain responses. Built domain-adaptive RAG (Retrieval-Augmented Generation) pipelines to generate contextual insights, and deployed the system as serverless microservices on Azure Functions for scalable,low-latency inference across multiple clients.

488 Days

AI Image Pipeline

Developed a custom MLOps pipeline integrating open-source models (ResNet-50 for image classification, YOLO for object detection, EasyOCR for text extraction) with closed-source Azure AI services. Leveraged Azure Container Registry (ACR) and Azure MLOps workflows to enable automated retraining, containerization, and deployment. Designed a standardized end-to-end process—from data ingestion and preprocessing to model training, evaluation, and deployment—that supports rapid on-boarding of new clients and accelerates time-to-production across multiple use cases.

182 Days

Review Sentiment Analysis

Implemented a customer review sentiment analysis system, initially leveraging fine-tuned Davinci models and later migrated to lightweight GPT-mini models for cost efficiency and faster inference. Applied structured output schemas and advanced prompt engineering to consistently extract sentiment categories, entities, and key themes from unstructured review data.

395 Days

Jersy Generation

Built a generative design workflow using Stable Diffusion to synthesize novel T-shirt patterns and graphics. Integrated a 3D rendering pipeline to apply generated designs onto garment models for realistic previews, and implemented automated conversion into print-ready formats (CMYK, vectorized outputs) for manufacturing.

424 Days

Defect Detection

Developed an industrial defect detection system using NVIDIA Jetson devices with the DetectNet framework for real-time object detection. Built a full pipeline encompassing data collection, preprocessing, model training, and optimized deployment on edge devices. Successfully integrated into the factory floor to perform on-device inference, enabling real-time defect identification and quality control automation.

761 Days

AI Chatbot

Developed an AI-powered chatbot platform integrating Large Language Models (GPT) with the Rasa framework for hybrid open-domain and closed-domain conversations. Implemented MongoDB for session/state management, ElasticSearch for

semantic and keyword-based retrieval, and REST APIs for system integration. Designed workflows with human handoff mechanisms to ensure seamless escalation from automated dialogue to live agents.

COURSES & CERTIFICATIONS

- IBM Data Science Professional Certificate

- Deep Learning Specialization