Swarna Nagendra

Machine Learning Engineer

Dallas, TX , USA

Indian

Female

LinkedIn

Upwork

PROFILE

A seasoned Machine Learning and AI Engineer with over 11 years of diverse industry experience. For the past 5 years, I have specialized in Image Analytics, Computer Vision, Machine Learning (ML), Natural Language Processing (NLP), and Large Language Models (LLM), developing impactful solutions to tackle complex industrial data challenges. With deep expertise in leveraging cutting-edge Generative AI and LLM technologies, I have successfully built applications that drive innovation and efficiency.
My career began in the Industrial Automation and Process Control domain. I spent 5 years leading product validation, test automation, gathering requirements, and contributing to product development.

EDUCATION

Bachelor of Engineering in Instrumentation Technology, 2009 – 2013
Sri Jayachamarajendra College of Engineering (SJCE) Mysore, India

PROFESSIONAL EXPERIENCE

Computer Vision and ML engineer, *Yokogawa Technologies Solutions India* 2019 Jan – 2024 Sep

Senior Software Engineer, *Yokogawa Technologies Solutions India* 2013 Jul – 2018 Dec

SKILLS

PYTHON ●●●○○
NumPy, Pandas, Matplotlib, Keras, SciKit-Learn, PyTorch, SPACY, Open CV, Plolty, Streamlit, PyPDF, LangChain,

Generative AI technology ●●●○○
NLP, Generative Models, Large Language Models(LLM), OPEN AI GPT models, Retrieval Augmented Generation (RAG), Prompt Engineering

ML and Image processing ●●●●○
OpenCV, Neural network architectures like Convolutional Neural Networks (CNNs) and Recurrent Neural Networks (RNNs), Object detection, Segmentation, TensorFlow deep learning frameworks, Scale-Invariant Feature Transform (SIFT), Local Outlier factor(LOF), Histograms, Isolation Forests, One Class-Support Vector Machines(OC-SVM)

Azure Services ●●●○○
Azure Open AI, Azure Co-Pilot, Azure Document Intelligence, Language service, Azure Bot service, Azure cognitive service

PROJECTS

Anomaly Detection in Sensor chip images, *Detect anomalies occurring on electronic sensor chips during manufacturing process.*
- **Image Preprocessing:** Employed advanced OpenCV techniques to preprocess images, effectively handling noise and retaining relevant features despite variability in the image capture process.
- **Model Development:** Designed and implemented Autoencoder models for unsupervised learning to detect defects and anomalies within high-dimensional pixel data.
- **Solution Enhancement:** Integrated additional layers of OpenCV logic to increase robustness, ensuring consistent and reliable anomaly detection across different image capture conditions.

Customized Business Chatbot Development, *Generative AI Based Chatbot using Azure OpenAI Services and Lang chain architecture*
- **NLP Integration**: Developed a customized chatbot specifically designed for business users, integrating fundamental Natural Language Processing (NLP) libraries.
- **Advanced Gen AI Technologies**: Incorporated advanced Generative AI technologies, including traditional and Graph RAG (leveraging company data) to enhance chatbot capabilities.
- **Tailored Solution**: The bespoke chatbot was tailored to meet the unique needs of business users, offering a sophisticated and effective communication tool.

DECLARATION

I acknowledge that this CV serves as a representation of my skills , qualifications and experiences, and I am prepared to provide additional information of references or information upon request.

Swarna Nagendra
Bangalore