Himalaya Ashish

AI ENGINEER | MACHINE VISION ENGINEER | SENIOR DATA SCIENTIST | MLOPS

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SUMMARY

A seasoned AI Engineer / Machine Vision Engineer / Senior Data Scientist with over a decade of experience in LLM, GenAI, computer vision, image processing, artificial intelligence, deep learning and machine learning. Highly skilled in analyzing large datasets and deriving meaningful insights using state-of-the-art algorithms.

TECHNICAL SKILLS AND INTERESTS

LANGUAGE: Python, C++, SQL

DEEP LEARNING FRAMEWORK :Tensorflow,Keras,OpenCV and ffmpeg,ONNX,TFlite,Applied Deep Learning,UNet, YOLO, EfficientNet,Object detection Image classification, Image Segmentation NLP, Artificial Intelligence, Neural networks, Transfer Learning,Cuda,PyTorch.

TECHNICAL COMPETENCIES: LLM (Langchain, RAG,Agents), Halcon MVTec Deep Learning,Computer vision,Image Processing,Transformers,AWS MLOps,Machine Learning,NVIDIA Architecture,Docker.

CLOUD / CICD:AWS code commit, code built, code pipeline, S3, IAM, AWS cloud watch, AWS Lambda, Hive, Relational Database(mySql), SSMS,MongoDb.

DEVELOPMENT TOOLS: HALCON MVTec,Visual Studio,Pycharm,Sage Maker Studio,Jupyter Notebook,Google Colab.

DOMAIN: Healthcare,Manufacturing,Software,Semiconductor,Oil & Gas.

SOFT SKILLS: Problem Solving, Self-learning, Presentation, Adaptability.

EXPERIENCE

•IBM Labs   *JUNE 2023 - PRESENT*

AI Engineer
- Developed call-center chatbots using WatsonX LLMs, ChromaDB, and prompt engineering, increasing customer satisfaction by 30% and processing speed and accuracy by 25%.
- Implemented python based RAG methodology and context-aware agents with LangChains and Langsmith, boosting user engagement by 40% and AI interaction efficiency by 20%.
- Created defect analysis and image processing scripts in Halcon for internal projects involving line scan cameras and 50 MB grayscale images.
- Extracted image and text information from grayscale images (2 seconds per image) using OXCL lighting and filters like Gaussian and Sobel, ensuring precision.
- Automated failed image reporting with detailed logs, conducted camera calibration using a 9x9 chessboard, and collaborated with PLC and commissioning teams for optimal setup and troubleshooting.
- Collaborated on Generative Adversarial Networks (GANs) and Variational Autoencoders (VAEs) to generate high-quality synthetic data, improving data diversity by 60%.

•Accolite Digital   *MAY 2022- JUNE 2023*

Senior Machine vision Engineer
- Used MVTec Halcon, area scan cameras to detect 1mm scratches on 300 x150 cm sheet metal, improve defect detection by 25%, excluding faulty parts.
- Achieved 98% scratch detection accuracy by implementing a closed- environment lighting setup for challenging conditions.
- Built object detection models with Detectron2, Mask R-CNN, RetinaNet, and UNet, achieving 95% accuracy for lumbar in DICOM images and 90% precision for X-ray instruments.
- Enhanced image clarity by 30% and reduced false positives by 20% using autoencoders and CLAHE for noise reduction.
- Optimized MLOps with Jenkins, GitHub, Docker, Kubernetes, and AWS code commit, code build and code pipelines, cutting deployment time by 40%.
- Strong proficiency in Python and scientific computing libraries (Scikit-learn, XGBoost, TensorFlow, PyTorch, Pandas, NumPy).

•Deloitte   *May 2019 - May 2022*

Machine Learning Engineer
- Utilized MVTec Halcon for OCR and barcode reading in automotive paint processes, automating text detection for precise car chassis painting.
- Deployed area scan cameras to process RGB images, overcoming challenges as the customer required real-time monitoring and rejected grayscale solutions.
- Enhanced automation and quality control in manufacturing by integrating advanced image processing workflows.

- Trained and fine-tuned state-of-the-art models like Mask R-CNN, MobileNet, ResNet, EfficientNet, and YOLOv3 for object detection, image segmentation and image classification tasks.
- Proficient in Git and version control best practices for collaborative development.
- Designed and deployed AWS CI/CD pipelines using Git, ECR, Jenkins, Docker, and Kubernetes for seamless integration and continuous delivery
- Implemented data governance frameworks to ensure compliance with legal and ethical standards, maintaining data quality, security, and privacy.
- Collaborated with cross-functional teams, translating business requirements into scalable technical solutions, ensuring alignment between stakeholders, IT teams, and data scientists.
- Developed cloud-based architectures with expertise in AWS, Azure, and hybrid cloud environments, optimizing storage solutions and cost-efficient infrastructure design.
- Integrated big data technologies to enable real-time analytics and streaming data processing, enhancing decision-making capabilities.
- Built data pipelines for AI and ML workloads, optimizing database structures for seamless model training and deployment.

•eClerx   *JUN 2017 - MAY 2019*

Data Scientist
- Developed a hybrid OCR model combining object detection and OCR to extract text from PDFs for an oil and gas company, enhancing document digitization accuracy and efficiency.
- Developed Named Entity Recognition (NER) models using Word2Vec, TF-IDF, and BERT to accurately identify and classify entities in text data.
- Created LSTM based models for Text summarization models for dialogue and documents summarization.
- Built and fine-tuned BERT-based models for advanced text classification and NER tasks, improving the accuracy and performance of NLP applications.
- Designed and implemented text classification models using Bag-of-Words, TF-IDF, and word2vec techniques for categorizing emails and PDF documents.
- Created a topic modeling pipeline using Latent Dirichlet Allocation (LDA) to identify themes and trends in large text datasets.
- Implemented advanced ensemble methods, such as stacking and boosting, to combine multiple forecasting models, resulting in a 25% improvement in prediction stability and accuracy across various seasonal trends

•CGI   *Feb 2012 - Jun 2017*

Associate Software Engineer
- Implemented log-shipping and database mirroring in SQL Server Management Studio, ensuring 99.9% data availability and reliability.
- Developed SSMS Jobs for daily backup, restore, and cleanup, and optimized query performance, reducing response time by 30%.
- Built a robust data pipeline with Python, Hadoop, SQL, and Hive, processing over 1TB of data daily.
- Worked on Physical to Virtual P2V DB / data migration.
- Developed scripts for daily alerts and notification.

CERTIFICATION

- **TensorFlow Developer Certification**

- **Generative AI with LLM [AWS]**

- **Nvidia Deep Learning**

- **Code Integration With HDev Engine**

- **Halcon MVTec Deep Learning**

EDUCATION

Woolf University MS - AI and ML	*Oct 2022 - Oct 2024*
GEC, Gwalior BE - IT	*Aug 2007 - Dec 2011*

ACHIEVEMENTS

•**Recognised by IBM leaderships with Blue points.**	*2024*
•**Promoted to Manager at Deloitte, recognizing excellence in AI and ML.**	*2022*
•**Received PAT ON BACK Award by Deloitte leaderships.**	*2021*