

KISHORI MOHAN DEKA

Principal Architect | Computer Vision & Manufacturing Intelligence

Bangalore, Karnataka (*Ready for Relocation to Assam*)

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Executive Summary

Guwahati-native **Solution Architect with 15+ years of experience**, seeking to leverage deep expertise in **Cloud Architecture, VLDB (Oracle)** and **Industrial AI** to establish world-class IT/OT infrastructure at Tata Electronics, Jagiroad. Currently an AI Technical Lead at Genpact. Transitioning from Enterprise IT to **Smart Manufacturing**, with a specific focus on applying **CNNs for Defect Detection** and **RAG architectures** for Process Knowledge Management. Committed to the long-term industrial growth of Assam.

Core Competencies

- **Industrial AI:** Computer Vision (CNNs) for AOI (Automated Optical Inspection), Yield Prediction Models, Predictive Maintenance.
- **Data Architecture:** Management of VLDBs (Very Large Databases) suitable for high-throughput sensor/telemetry logs (24/7 reliability).
- **Cloud & Edge:** Hybrid Cloud Architecture (AWS/Azure) for secure Factory-to-Cloud data pipelines; Edge AI deployment.
- **DevOps & MLOps:** CI/CD pipelines for deploying updated inspection models to production lines without downtime.
- **Tech Stack:** Python (PyTorch/ TensorFlow), Oracle DB, PostgreSQL DB, SQL/PLSQL, Terraform, Docker/Kubernetes.

Semiconductor Domain Focus

Predictive Maintenance for Rotary Equipment

Lead Architect (R&D Initiative)

Lab environment

May 2025 – Present

- **Capstone Project: Wafer Map Defect Classification using ResNet-50**
 - **Objective:** Automated classification of wafer defects (Center, Donut, Locul, Scratch patterns) using the **WM-811K dataset**.
 - **Architecture:** Built a pipeline using Python/Pandas for data preprocessing and a CNN (ResNet) for pattern recognition, simulating a *Virtual AOI* station.
- **Concepts Mastered:** Semiconductor Packaging Lifecycle (Wafer Sort, Die Attach, Wire Bond, Encapsulation), OEE (Overall Equipment Effectiveness) metrics, SECS/GEM data protocol basics.

Professional Experience

Genpact

Solution Architect (*AI Innovation Lab*)

Bangalore

May 2019 - Present

- **Computer Vision Architecture (AOI Focus):** Led the design of CNN-based monitoring systems, applying object detection techniques directly transferable to **Automated Optical Inspection (AOI)** pipelines for Wire Bonding and Final Test quality control.
- **Knowledge Retrieval Systems (RAG):** Architected Retrieval-Augmented Generation (RAG) solutions for complex technical documentation, providing the foundational architecture for **Smart Technician Assistants** to query Factory SOPs and Machine Manuals.

- **Scalable MLOps Implementation:** Standardized MLOps pipelines to transition models from Python Notebooks to production APIs, ensuring the rigorous version control and reliability required for **continuous industrial inference**.

SoftwareONE

Technical Lead (*Cloud Platforms*)

Bangalore

May 2015 – April 2019

- **Hybrid Cloud & Data Sovereignty:** Designed secure Hybrid architectures (On-prem + Cloud) to balance performance and privacy, enabling the retention of **sensitive data at the Edge** while bursting anonymized analytics workloads to the cloud.
- **Automated Infrastructure (IaC):** Implemented Terraform and Ansible to automate environment provisioning, reducing setup time by 40% and ensuring standardized, repeatable configuration management for cloud infrastructure.
- **High-Availability Engineering:** Engineered resilient systems delivering 99.9% uptime, ensuring the reliability required for 24/7 continuous operations and minimizing costly production downtime.

Oracle

Senior DBA

Hyderabad & NOIDA

Oct 2011 – March 2015

- **VLDB Performance:** Managed Multi-Terabyte databases for high-concurrency environments, optimizing data structures capable of handling high-volume telemetry and *Big Data* ingestion typical of **Factory Data Historian** layers.
- **Data Integrity & Traceability:** Ensured zero data loss for mission-critical transactional systems, implementing rigorous audit trails that mirror **Unit-Level Traceability** standards required in semiconductor manufacturing.

Kore.ai

Senior Technical Consultant

Hyderabad

Apr 2009 – Oct 2011

- Managed Oracle Web Application Server and Oracle Database implementations for US and EMEA based Aviation clients, adhering to strict compliance and uptime standards.

Education

Indian School of Business

Adv Mgmt Prog in Analytics & Artificial Intelligence (APMBA 2024W)

Hyderabad

2024 – 2025

Jawaharlal Nehru Technical University

Electrical & Electronics Engineering

Hyderabad

2004 - 2008

Certifications

AWS Certified Advanced Networking / IoT Specialty

2025

Amazon Web Services

Semiconductor Packaging Specialization

2026 (in-progress)

Coursera (offered by Arizona State University)