

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	Bangalore
<i>Technical Lead (Cloud Platforms)</i>	<i>May 2015 – April 2019</i>

- **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	Hyderabad & NOIDA
<i>Senior DBA</i>	<i>Oct 2011 – March 2015</i>

- **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	Hyderabad
<i>Senior Technical Consultant</i>	<i>Apr 2009 – Oct 2011</i>

- 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	Hyderabad
<i>Adv Mgmt Prog in Analytics & Artificial Intelligence (APMBA 2024W)</i>	<i>2024 – 2025</i>
Jawaharlal Nehru Technical University	Hyderabad
<i>Electrical & Electronics Engineering</i>	<i>2004 - 2008</i>

Certifications

AWS Certified Advanced Networking / IoT Specialty	2025
<i>Amazon Web Services</i>	
Semiconductor Packaging Specialization	2026 (in-progress)
<i>Coursera (offered by Arizona State University)</i>	