

# 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 **VLDB (Oracle)**, **Cloud Architecture**, 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, SQL/PLSQL, Terraform, Docker/Kubernetes.

## Semiconductor Domain Focus (Self-DrivenFocus)

### Predictive Maintenance for Rotary Equipment

Lead Architect (R&D Initiative)

**Self Initiated**

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:** Led the design of Vision-based monitoring systems using **CNNs**. **Relevance to Tata:** Skills transferable to **Automated Optical Inspection (AOI)** systems used in Wire Bonding and Final Test stages.

- **LLM & RAG Solutions:** Architected Retrieval-Augmented Generation (RAG) systems to query vast technical document repositories. *Relevance to Tata:* Applicable for *Smart Technician Assistants* to instantly query SOPs and Machine Manuals.
- **Model Deployment:** Standardized MLOps pipelines to move models from Python Notebooks to production APIs, ensuring scalability and version control.

## SoftwareONE

*Technical Lead (Cloud Platforms)*

## Bangalore

*May 2015 – April 2019*

- **Hybrid Cloud Strategy:** Designed secure Hybrid architectures (On-prem + Cloud). *Relevance to Tata:* OSATs typically keep sensitive yield data on-prem (Edge) while bursting anonymized analytics to the Cloud.
- **Infrastructure as Code (IaC):** Implemented Terraform/Ansible to automate environment provisioning, reducing setup time by 40%.
- **High-Availability Systems:** Engineered systems for 99.9% uptime, critical for 24/7 manufacturing shifts.

## Oracle

*Senior DBA*

## Hyderabad & NOIDA

*Oct 2011 – March 2015*

- **VLDB Performance:** Managed **Multi-Terabyte Databases** for high-concurrency environments. *Relevance to Tata:* Semiconductor tools generate massive log files (Big Data). Your ability to manage VLDBs is critical for the "Data Historian" layer of the factory.
- **Data Integrity:** Ensured zero data loss for transactional systems, mirroring the requirement for "Traceability" in chip manufacturing (tracking every chip back to its wafer).

## Kore.ai

*Senior Technical Consultant*

## Hyderabad

*Apr 2009 – Oct 2011*

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

## Education

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### Indian School of Business

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

Hyderabad

*2022 – 2025*

### Jawaharlal Nehru Technical University

*Electrical & Electronics Engineering*

Hyderabad

*2004 - 2008*

## Certifications

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### AWS Certified Advanced Networking / IoT Specialty

*Amazon Web Services*

*2025*

### Semiconductor Packaging Specialization

*Coursera (offered by Arizona State University)*

*2026 (in-progress)*