

# 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.

<b>SoftwareONE</b>	<b>Bangalore</b>
<i>Technical Lead (Cloud Platforms)</i>	<i>May 2015 – April 2019</i>
<ul style="list-style-type: none"> <li>○ <b>Hybrid Cloud Strategy:</b> Designed secure Hybrid architectures (On-prem + Cloud). <i>Relevance to Tata:</i> OSATs typically keep sensitive yield data on-prem (Edge) while bursting anonymized analytics to the Cloud.</li> <li>○ <b>Infrastructure as Code (IaC):</b> Implemented Terraform/Ansible to automate environment provisioning, reducing setup time by 40%.</li> <li>○ <b>High-Availability Systems:</b> Engineered systems for 99.9% uptime, critical for 24/7 manufacturing shifts.</li> </ul>	

<b>Oracle</b>	<b>Hyderabad &amp; NOIDA</b>
<i>Senior DBA</i>	<i>Oct 2011 – March 2015</i>
<ul style="list-style-type: none"> <li>○ <b>VLDB Performance:</b> Managed <b>Multi-Terabyte Databases</b> for high-concurrency environments. <i>Relevance to Tata:</i> Semiconductor tools generate massive log files (Big Data). Your ability to manage VLDBs is critical for the "Data Historian" layer of the factory.</li> <li>○ <b>Data Integrity:</b> Ensured zero data loss for transactional systems, mirroring the requirement for "Traceability" in chip manufacturing (tracking every chip back to its wafer).</li> </ul>	

<b>Kore.ai</b>	<b>Hyderabad</b>
<i>Senior Technical Consultant</i>	<i>Apr 2009 – Oct 2011</i>
<ul style="list-style-type: none"> <li>○ Managed Oracle Web Application Server and Oracle Database implementations for US and Europe based Aviation clients, adhering to strict compliance and uptime standards.</li> </ul>	

## Education

<b>Indian School of Business</b>	Hyderabad
<i>Adv Mgmt Prog in Analytics &amp; Artificial Intelligence (APMBA 2024W)</i>	<i>2022 – 2025</i>
<b>Jawaharlal Nehru Technical University</b>	Hyderabad
<i>Electrical &amp; Electronics Engineering</i>	<i>2004 - 2008</i>

## Certifications

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