KEERTHAN G V

Machine Learning Engineer — Computer Vision & AI Systems

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PROFESSIONAL SUMMARY

B.E. graduate (Artificial Intelligence & Data Science) with hands-on experience building AI-powered computer vision applications and semiconductor diagnostic platforms. Skilled in developing FastAPI backend services, applying deep learning (PyTorch) and classical machine learning (scikit-learn), and shipping Next.js/React dashboards for real-time analytics. Comfortable across the full AI product lifecycle — image processing, model explainability, spatial/statistical analytics, REST API design, and Docker-based deployment. Solid grounding in Python, SQL, and OpenCV, backed by two peer-reviewed publications spanning AI and blockchain.

TECHNICAL SKILLS

Backend & APIs: FastAPI, Node.js, REST API design, Uvicorn, Docker & docker-compose, System design fundamentals

Languages: Python (primary), Java, JavaScript/TypeScript, C, SQL

Databases: MongoDB, PostgreSQL, MySQL

Frontend (supporting): Next.js, React, TypeScript, Tailwind CSS

ML / AI / Computer Vision: PyTorch, TensorFlow, scikit-learn, OpenCV, CNNs & ResNet architectures, Grad-CAM & explainable AI, NLP, LLMs, GenAI & agent pipelines, Ollama

Tools & Data: Git/GitHub, pytest, Pandas, NumPy, PyArrow, Jupyter, Power BI

EXPERIENCE

ML Engineer — Verileumen Labs (Semiconductor & AI), Bengaluru *May 2026 – Present*

- Designing and building WaferVision-AI, a deep learning-based wafer inspection platform used for automated, die-level defect analysis on production wafer images.
- Implemented a shared ResNet50 classifier (PyTorch) to identify Edge-Ring, Edge-Loc, and Scratch defect patterns, returning confidence-calibrated predictions with Grad-CAM explainability overlays.
- Built OpenCV-based die coordinate extraction and GOOD/FAIL classification, spatial defect clustering with severity ranking, and Gaussian-smoothed defect density visualization.
- Delivered a FastAPI backend and Next.js/React dashboard exposing yield analytics, KPI summaries, and CSV/JSON export for wafer inspection sessions.

PROJECTS

WaferVision-AI | PyTorch, FastAPI, Next.js, OpenCV, ResNet50

Developed an AI-powered semiconductor wafer inspection platform featuring deep learning-based defect classification, die-level analysis, spatial defect clustering, Grad-CAM explainability, density visualization, yield analytics, and an interactive dashboard for real-time wafer inspection.

Scan Chain Diagnosis Agent (SCDA) | Python, FastAPI, Next.js, React, scikit-learn, Docker

Developed a full-stack semiconductor scan diagnosis platform that automates scan-test log analysis, identifies failing scan chains and cells, classifies shift/capture failures, predicts root causes using machine learning, and visualizes diagnostic insights through an interactive dashboard with automated engineering reports.

Deepfake Detection System | CNN + RNN, TensorFlow, OpenCV

- Built an end-to-end deepfake detection pipeline using CNNs + RNNs, optimized for near-real-time inference on benchmark datasets.
- Published as a peer-reviewed paper at ICAIH 2025, St Aloysius (Deemed University), Mangalore.

EDUCATION

B.E. — Artificial Intelligence & Data Science, BGSCET (VTU), Bengaluru · 2022 – 2026 · CGPA: 8.2

Pre-University (PCMC), New Horizon Pre University College · 83.34%

SSLC (10th), ITI Central School · 70%

PUBLICATIONS & ACHIEVEMENTS

- “Deepfake Detection with Advanced CNN and RNN Techniques” — presented at ICAIH 2025, St Aloysius (Deemed University), Mangalore (peer-reviewed).
- “Corrupt Watch: AI & Blockchain Integrated City” — presented at an IEEE International Conference, Ghousia College of Engineering, Ramanagara (peer-reviewed).
- 1st Prize, FPV Drone Project — BGS College Techno-Cultural Fest (30+ teams); active hackathon participant (4+ events) across AI, ML & civic-tech themes.