Nayeemuddin Mohammed

DOB: 03.03.2001 | Munich, DE
+49 15563598740 | nayeemuddin.mohammed@stud.th-deg.de
linkedin.com/in/nayeemuddin-mohammed-03 | github.com/thelostbong
nayeemuddin.de



Professional Summary

AI Infrastructure / MLOps-focused Engineer with 2 years of production DevOps and cloud experience at Tata Consultancy Services (AWS, Terraform, Kubernetes, GitLab CI/CD). Now extending that foundation to run AI systems at TH Deggendorf, the last year has been spent applying it: real-time computer vision for factory-floor defect detection, and generative pipelines that turn product text into catalogue-ready imagery. Experienced in Docker, Amazon EKS, and state-of-the-art machine learning.

Education

Technische Hochschule Deggendorf — Cham, Germany
M.Eng in Applied AI for Digital Production Management; Grade: 1.8 — *Mar 2025 – Present*

SRM Institute of Science and Technology — Chennai, India
B.Tech in Mechanical Engineering; CGPA: 9.03 — *Jun 2019 – May 2023*

Experience

Research Assistant – AI & Computer Vision — Cham, Germany
Technische Hochschule Deggendorf — *Feb 2026 – Jul 2026 (6 months)*

- **Edge AI Inspection**: Delivered a YOLOv12 assembly-inspection pipeline on Raspberry Pi 5 spanning 16 product variants, reaching 95% mAP@50, precision, and recall, and replacing manual visual inspection with real-time multi-camera defect detection
- **Inference Latency**: Cut model inference under 500ms, with the full edge-to-MES round trip (detection through the REST API to a recorded result) landing under one second per unit
- **MES Integration**: Designed the REST API (Python/FastAPI) and offline-queuing layer linking edge inference to Tulip MES, producing zero-duplicate, audit-ready quality records with full edge-to-production traceability

Research Assistant – AI & Statistical Modelling — Cham, Germany
Technische Hochschule Deggendorf — *Sep 2025 – Dec 2025 (4 months)*

- **DOE & Predictive Modelling**: Designed and ran CCD-RSM, D-optimal, and mixed factorial DOE experiments across additive manufacturing and robotics domains
- **Automation**: Developed R/Python pipelines combining ANOVA and ML-based optimization to replace manual statistical analysis
- **Curriculum Adoption**: That pipeline is now used to teach DOE methodology to THD students

DevOps Engineer – IoT & Cloud Infrastructure — Hyderabad, India
Tata Consultancy Services — *Mar 2023 – Feb 2025 (2 years)*

- **CI/CD Automation**: Replaced manual deployment steps with GitLab, Jenkins, and SonarQube pipelines for IoT firmware and backend releases, cutting deployment time from 48 hours to under 30 minutes and moving release cadence from bi-weekly to on-demand
- **Cloud Infrastructure**: Provisioned and managed Terraform-based infrastructure on Kubernetes (Amazon EKS), containerizing and running 50+ microservices across 300+ pods with Docker in 4 lifecycle environments, monitored through custom PostgreSQL-backed KPI dashboards in Grafana
- **Real-Time IoT Pipelines**: Deployed AWS IoT Core, Lambda, and IoT Analytics for an event-driven data architecture over MQTT and HTTP, sustaining 99.99% uptime across 10,000+ active edge devices and 2M+ daily events

Projects

Automated Defect Detection - Edge AI: YOLO-based quality-control system on ESP32-nano for real-time defect classification in manufacturing parts, posting >95% detection accuracy at under 2s inference with a false-positive rate below 5%

Multimodal Generative AI Pipeline - Fashion: Four-model generative pipeline (Helsinki-NLP → Phi-3 Mini → FLUX.1-schnell/LoRA → CLIP scoring) that turns German product text into catalogue-ready fashion imagery for NKD, hitting an 87.6% first-pass success rate at ∼90% lower cost than traditional photography, 42s per image

Fetal Health Classification - ML Pipeline: Compared Logistic Regression, Random Forest, and SVM on CTG readings with SMOTE kept inside the training pipeline to avoid test-set leakage; Random Forest reached 94.6% accuracy and 94.4% F1 on the held-out set

Cost-Aware Demand Forecasting: Backtested ARIMA, SARIMA, and Prophet on retail order data and ranked them by total inventory cost rather than raw accuracy: plain ARIMA won both categories despite a worse AIC score, since SARIMA's seasonal term overfit the smaller backtest windows without lowering the final forecast cost

Zollhof Impact Digital Twin: Built in TypeScript during the Claude Impact Lab Hackathon in Nuremberg, this system uses a single Claude Opus call to produce a Zod-validated, multi-dimensional startup-impact profile against the IMP framework, IRIS+ themes, and UN SDG targets, shipped live as a Vercel serverless API within an 8-hour build window

Technical Skills

MLOps & Infrastructure: Docker, Kubernetes, Terraform, GitLab CI/CD, Jenkins, MLflow, AWS (IoT Core, Lambda, CloudFormation), Grafana

ML / Computer Vision: YOLOv12, OpenCV, CLIP, Hugging Face Transformers, Scikit-learn, PyTorch, TensorFlow, Keras, LoRA fine-tuning, Diffusion Models

Programming: Python (NumPy, Pandas, FastAPI), R, PostgreSQL, JavaScript/TypeScript, HTML/CSS

Edge & Embedded: Raspberry Pi 5, ESP32, MQTT, CoAP, REST API

Languages

English: Native

German: A2