



Pavitra Murugesan

Manufacturing AI Manager

Contact

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mpavu.github.io (portfolio + GitHub)

About Me

Manufacturing AI Manager at P&G with 4+ years in industrial data science and AI. I take manufacturing AI from proof of concept to production, then make it repeatable: 55+ use cases coached across 18+ plants and 11+ business units, ~\$15M estimated value. Hands-on across MLOps (Azure ML, Siemens Industrial Edge), OT/PLC integration and LLM agents. EU Blue Card holder.

Skills

- **AI:** anomaly detection, predictive maintenance, time-series forecasting, soft sensors, GenAI and AI agents, JMP
- **MLOps and cloud:** Azure ML, Databricks, AWS, Docker, GitHub, CI/CD, Prometheus
- **Industrial / OT:** Siemens Industrial Edge, PLC integration (S7, Rockwell, Mitsubishi), OPC UA, MQTT, Profinet, Modbus TCP/IP, Node-RED, TIA Portal
- **Programming:** Python, R, SQL, MATLAB/Simulink, Power BI, Power Apps

Experience

MANUFACTURING AI MANAGER

04/2024 – Present

Procter & Gamble GmbH, Corporate Engineering | Kronberg, Germany

- **Manufacturing AI Scaling:** Led the development and scaling of **55+ ML/AI solutions** across Autonomous Maintenance, Progressive Maintenance, and Loss Elimination, spanning **18+ sites** and all business units, from use-case definition to production. **Delivered ~\$15M** in estimated value and identified **\$38M in additional potential**.
- **Global Capability Building:** Led the end-to-end Manufacturing AI Qualification Program across 4 regions, designing and delivering **8 sessions** that trained **200+ participants** and enabled the delivery of **19 AI use cases** within a compressed timeframe.
- **Global AI Portfolio & Cross-Functional Leadership:** Orchestrated collaboration across manufacturing, IT, data science, engineering, and external technology partners to shape and scale the **global low-code AI** and **anomaly detection portfolio**, from **identifying high-value problems** and **aligning stakeholders** to **defining solution architecture** and deploying scalable solutions across business units.
- **Vendor Management:** Established and managed a strategic **AI engineering partnership**, introducing a biweekly delivery cadence and DevOps practices to accelerate solution development, integration, and deployment.
- **Organizational Culture Lead:** Led the **Culture Team for the Germany Innovation Center**, driving engagement, collaboration, inclusion, learning, and recognition through strategic initiatives, including the site master plan, Career Day, and annual employee events.

DATA SCIENCE INTERNSHIP AND THESIS

05/2023 – 02/2024

Procter & Gamble GmbH | Kronberg Innovation Center, Germany

- **Product Development:** Cut **model-to-deployment time from 90 to 30 days** by building an automated, low-code MLOps solution that deploys models to Siemens Industrial Edge through a **staged CI/CD pipeline** (Azure ML, GitHub, Power Apps).
- **Product Management:** Shipped a production release in agile sprints, **enforcing quality through SonarQube and IT compliance** review, then **drove adoption** through enablement sessions and hackathons.

WERKSTUDENT ALARM SENSOR SYSTEMS

10/2022 – 03/2023

Aptiv GmbH | Wiehl, Germany

- **Developed a neural-network classifier** that distinguishes glass from metal impacts for a new vehicle alarm sensor, reaching **88% accuracy** and adding damage-type detection beyond the existing left, right, door, and rear localization.
- Performed signal processing, analysis, and feature optimization on sensor data in MATLAB.
- **Collaborated** on sensor planning and installation on test vehicles, and reviewed project goals monthly with the project manager and production team.

DATA SCIENCE INTERN

05/2021 – 06/2021

Remark Skill Education | Delhi, India

- Worked exclusively on the project "**Handwritten Character Recognition** in Python Using Convolutional Neural Networks (Keras and TensorFlow)".

Leadership

- Global program management
- Stakeholder and vendor management
- Capability building and coaching
- Training program design
- Change management
- Agile delivery

Languages

- English (C2)
- German (B1, ongoing)
- Tamil (Native)
- Hindi (Native)
- Korean (A1)

Hobbies

- Reading novels
- Travelling
- Photography
- Digital art

Projects

GENAI & AGENTS

AI Use-Case Finder | LLM, RAG, Streamlit, SharePoint

Built a RAG assistant over P&G's library of 100 AI/ML use cases, used globally by a 200+ member AI community to find proven solutions and reapplication ideas. It then guides teams to start with common best approach (CBA) templates (team charter, inputs and outputs, model artifacts), saving hours of site-activation meetings.

AI Use-Case ROI Prioritizer (in progress) | LLM, Python, Streamlit

Building a public web tool where plant teams describe a problem in plain language and get value, feasibility, and data-readiness scores plus a go/no-go recommendation, based on patterns from 55+ industrial AI deployments.

INDUSTRIAL AI & MLOPS

CavitySense | Multi-cavity anomaly detection

Built logic that tracks process signals across 4–32 parallel cavities and pinpoints which cavity is drifting and when, so lines no longer stop to hunt for the faulty one. Scaled from one line to quality, scrap, and breakdown use cases, with \$470K per year in potential.

Touchless Quality: Soldering | Data analysis, process control

Found that soldering rejects (~1%) peaked right after maintenance and tracked the soldering pump current, then put a pump-current control strategy in place at start-up and after cleaning. Eliminated 100% manual inspection and saved \$910K.

INDEPENDENT BUILDS

Coinfluence | Python, Reflex, pandas, Plotly, pytest, GitHub Actions

Local-first personal finance dashboard that reads exports from 6 German banks, splits shared expenses, and tracks budgets and net worth; 81 automated tests run in CI on every push.

Education

M.Eng. Automation and IT

2021 – 2024

TH Köln, Cologne, Germany

Focus: industrial IoT and MES, industrial communication, IT security, data science.

B.Sc. (Hons) Instrumentation

2017 – 2020

University of Delhi, India

Focus: control systems, embedded systems, robotics.

Awards

CEO Award

Procter & Gamble, 2026

Solution Provider Award

Procter & Gamble, 2026
Supply Chain Innovation

Deutschlandstipendium

TH Köln, 2021 – 2024

National merit scholarship

Academic Awards

University of Delhi

1st and 3rd position