Manoj Nawale

Waldhornstraße 36, C203 | 76131 Karlsruhe
manoj.nawale@outlook.com | 0176 24281221

CIRRICULUM VITAE

PERSONAL DETAILS

DoB/Place	08.07.1997 in Pune, India
Citizenship	Indian
Family Status	Single
LinkedIn	GitHub

PROFESSIONAL EXPERIENCE

04.2023 – Present
multiple fixed-term contracts

wbk Institut für Produktionstechnik – KIT | Karlsruhe
Hilfswissenschaftler | Operations Analytics & Process Automation

- Developed OR-driven decision-support workflows combining optimization and simulation analyses for scenario-based capacity & capability evaluation. Enabled planners to evaluate 50+ what-if scenarios, reducing decision latency by 40%.
- Built ETL pipelines (python based) automating 80% of manual preprocessing, cutting preparation time from hours to minutes.
- Automated workflows with Apache Airflow, scheduling 10+ weekly data tasks with full observability.
- Performed EDA and preprocessing to identify anomalies and stabilize optimization runs.
- Created SimPy simulations analyzing bottlenecks and throughput, supporting line balancing decisions that improved OEE by 12%.
- Designed Power BI dashboards tracking cost, capacity utilization, and OEE for 20+ production stakeholders with Sankey visuals.

07.2024 - 03.2025

Robert Bosch GmbH | Stuttgart-Feuerbach
Masterarbeit | Data Integration & Analytics

- Contributed to a capacity and capability planning DSS for Bosch's global production networks. Built data integration components enabling planners to align resources with strategic volume targets across 4 sites.
- Replaced Excel-based planning with a SQL-powered MILP system (Gurobi). Cut solver runtime by 15% while maintaining <0.1% deviation across 500+ benchmark runs.
- Developed ETL pipelines (SQLAlchemy, Alembic) integrating ERP/MES/CRM data into a structured database for production and inventory decisions.
- Built data models supporting what-if scenario analysis for capacity constraints and resource allocation.
- Designed database schemas with role-based access, improving governance for 15+ planners. Delivered Power BI dashboards for volume and capacity monitoring.
- Structured typed data models (Pydantic/dataclasses) validating sets/parameters and ensuring reusable components.
- Presented technical results to Bosch and KIT stakeholders, translating optimization outputs into planning insights.

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EDUCATIONAL QUALIFICATIONS

10.2022 – 08.2025	**Karlsruhe Institute for Technology, Karlsruhe**

Study Program: Production & Operations Management
- ‣ Field of Study: General Industrial Engineering
- ‣ Specialization:
  - · Supply Chain Management
  - · Operations Research

Degree: Master of Science (M.Sc.)

Master Thesis: "Automated Data Integration for Multi-User Decision Support System in Global Production Networks"

07.2015 – 07.2019	Savitribai Phule Pune University, India

Study Program: Mechanical Engineering
- ‣ Field of Study: General Mechanical Engineering

Degree: Bachelor of Technology (B. Engg)

Bachelor Thesis: "Parametric Investigation of PMMA using Diamond Turning Process"

FURTHER TRAININGS

Aug 2025	Data Science and Supply Chain analytics
Jun 2024	Optimization with GAMS

PUBLICATIONS

- ‣ "Prediction of vibration effect on Surface Roughness of Polymethyl methacrylate (PMMA) by using ANN."

OTHER SKILLS AND KNOWLEDGE

Languages	German, Pursuing B1
	English, Business fluent (C1)
	Hindi, Native
	Marathi, Native
Computer Skills	Microsoft (PowerPoint, Excel, Power BI, Word)
	Production planning & capacity planning (scenario-based)
	KPI reporting (OTD, throughput, utilization, WIP)
	Programming (Python, VBA, SQL)
	CAD Software (AutoCAD, SolidWorks)
	Professional Skills (Git, Azure DevOps, CI/CD Pipeline Familiarity)

16.02.2026

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