

# Rucha Kathe

R&D Innovation | Digital Twin Engineer | Consultancy & Strategy

✉ kathe.rucha06@gmail.com ☎ +49 1633648102

📍 Allerseelenstraße 1D, Köln - 51105 📄 Permanent Residency



## Profile

---

Curious and continuously learning Mechatronics Engineer and R&D Innovation with strong expertise in Digital Twin technologies, automation, and advanced simulation. Passionate about digital technologies and AI, with proven experience in EU-funded research projects. Skilled in bridging engineering and strategy to deliver digitalization solutions and scalable transformations.

## Skills

---

Digital Twin idea to Development (Process and Product) | Siemens NX and TIA Portal | Siemens NX-MCD | XR/AR/VR Concepts | R&D Project Leadership | Consultancy and Strategy Alignment | FEA/FEM | Ansys | COMSOL | MATLAB/Simulink | Python | Architecture design | draw.io | Prompt Engineering | Technical Documentation | Stakeholder Engagement | Client-Facing Delivery | Trello | Notion | JIRA | Canva

## Professional Experience

---

### DigitalTwin Technology GmbH [🔗](#)

#### Project Leader

12/2024 – Present

- Lead Digital Twin concept development and deployment for manufacturing process.
- **Machine Digital Twin:** Developed from concept stage through data collection and pipeline setup, including creation of the digital replicas of sensors and motors.
- Managing EU-funded R&D projects; define specs, risks, and success metrics.
- **Boost3DMetal :** Managing work packages along with deliverables, developing the FEM tool, collecting data samples, coordinating with team members to ensure timely output, representing the company in meetings, and managing LinkedIn content.
- **DTRIP4H:** Managing three work packages and coordinating daily project activities, conducting regular and monthly meetings, and preparing the Functional Requirements Document for the use case.
- Managing LinkedIn content and updates for the research project.
- Writing Horizon EU-proposals defining the methodology and architecture.

#### Digital Twin Simulation Engineer

08/2022 – 11/2024

- **Energy ECS:** Developed 3D models of piezoelectric sensors and actuators in MATLAB, ANSYS, and COMSOL.
- Defined material properties and performed FEM simulations.
- Validated simulations and compared results for accuracy.
- Created digital prototypes from 3D CAD for virtual commissioning.
- Prepared technical documentation for projects.
- Contributed to Horizon proposals and defined project pipelines across various domains.

### TDK Electronics

#### Master Thesis Student

01/2022 – 06/2022

- Thesis: Development of an Automation Concept for Semi-Finished Inductor Coil (Siemens NX MCD and TIA Portal)

#### Engineer Intern

05/2021 – 10/2021

- Analysed production processes and developed automation/handling concepts

- Digitalised maintenance sheets across machines; improved process visibility.

Graduate Engineering Trainee

08/2018 – 08/2019

- Commissioned testing machines; implemented sensors and stoppage management software.
- Hands-on Siemens TIA Portal and Delta PLC; Kaizen participation and equipment concepting.

Microtech System Seviles, Intern

07/2018 – 08/2018

- PLC and HMI programming (Delta) for capacitor assembly automation (wet stacking press).

Origin D-Fab Pvt Ltd, Intern

01/2017 – 03/2017

- Design and prototyping support for new product development project.

## Education

---

MSc. Mechatronics, Universität Siegen

2019 – 2022 | Germany

- Grade : 2.1
- Thesis: Development of an Automation Concept for Semi-Finished Inductor Coil (Siemens NX MCD and TIA Portal) , Thesis Grade : 1.0

BE Mechatronics, Acharya Institute of Technology

2014 – 2018 | India

- Grade : 1.7 , University Ranker
- Thesis: Automatic Egg Hatcher Unit (Delta PLC, HMI, servo, sensor-based control)

## Languages

---

English – Native/Bilingual

Marathi – Native/Bilingual

Hindi – Fluent

German – Conversational

## Certificates

---

- |  |  |   |
|--|--|---|
| <ul style="list-style-type: none"> <li>• PG Level Certified Advanced Sensor Technologies Course <a href="#">↗</a></li> <li>• Learn Siemens S7-1200 PLC &amp; HMI from Scratch using TIA <a href="#">↗</a></li> </ul> | <ul style="list-style-type: none"> <li>• Factory Automation using PLC Logics <a href="#">↗</a></li> <li>• XRAI Hack Cologne</li> </ul> | <ul style="list-style-type: none"> <li>• Learn MATLAB and Simulink Programming <a href="#">↗</a></li> <li>• Getting Started with Embedded AI   Edge AI <a href="#">↗</a></li> </ul> |
|--|--|---|

## Activities

---

XR Hackathon:

- 48-hour sprint; AR overlays integrating live Digital Twin data (Unity/Unreal/ARKit as relevant).
- Collaboration with designers/developers; presented to mentors/judges; rapid prototyping and XR UX

## Community

---

2hearts – Community Member

2025 – Present

- Tech diversity network empowering talent in Europe.