

# Student Assistant – Development of Interactive AI Exercises in Production Engineering

## Motivation

Are you passionate about Artificial Intelligence, modern learning technologies, and innovative teaching formats? Join us in shaping the future of engineering education!

At the Institute for Machine Tools and Industrial Management (*iwb*) at TUM, we are redesigning the practical components of the course “AI in Production Engineering”. The goal is to migrate existing exercises to a modern, interactive notebook platform (Marimo) and enhance both the didactic and technical quality of the learning experience.

## Objective

You will support the design, technical implementation, and quality assurance of four interactive exercise modules that teach applied AI methods in a production context. You will work with cutting-edge tools such as Marimo, uv Package Manager, PyTorch, and JAX.

## Your Tasks

- Develop interactive notebooks using Marimo to teach AI concepts
- Integrate machine learning models (regression, classification, deep learning)
- Handle and visualize production-related datasets
- Test, debug, and document the exercise modules
- Assist in creating student-friendly guides and documentation

## Qualifications

We are looking for a proactive and reliable student who meets the following criteria:

- Field of Study: Enrolled in a Bachelor’s or Master’s program in Computer Science, Mechanical Engineering, Data Science, AI Engineering, or a related technical field
- Technical Skills:
  - Solid Python programming skills
  - Experience with ML frameworks (e.g., PyTorch, JAX)
  - Ideally, familiarity with interactive notebook environments (e.g., Jupyter, Marimo)
- Soft Skills:
  - Independent and structured working style
  - Interest in educational design and digital learning tools
  - Strong communication skills (German or English)
  - Team-oriented mindset

### What We Offer

- Active involvement in an innovative teaching project with real impact
- Hands-on experience with modern AI technologies and interactive learning environments
- Flexible working hours (average of 10 hours/week)
- Opportunity to develop both technical and educational skills
- Compensation according to TUM standards for student assistants (HiWi).

### Contact

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