



To strengthen our team in Stuttgart-Vaihingen, we are now looking for you as a

Master Thesis/Bachelor Thesis (m/f/d) in ARENA2036 Management

Focus: Robotics, AI-Driven Engineering Systems, Digital Twins & Quantum Machine Learning

We are looking for **motivated Bachelor's and Master's students** to conduct their thesis in the interdisciplinary fields of **Robotics, Artificial Intelligence, CAE–CAD, AI in Architecture & Construction, and Quantum Machine Learning** at **ARENA2036 in Stuttgart-Vaihingen**. The thesis topic will be **defined individually based on the student's interests and background**.

As the office of ARENA2036 e.V., we shape the cooperation of our partners and support their projects. You can find more information below in the footer & on our website.

As Bachelor/Master Thesis in the management team, you...

1. Robotics & Autonomous Systems

- Mobile, aerial, humanoid, and collaborative robotics: perception, planning, and human–robot interaction
- Cognitive and learning-based robotics in industrial environments (e.g. KUKA, NEURA Robotics)
- Multi-robot and agent-based coordination for production and logistics

2. Digital Twins, Simulation & AI

- Development of simulation-based digital twins for robotics, production, and engineering systems
- AI-driven optimization, planning, and decision-making in dynamic real-world environments
- Integration of sensor data, simulation, and intelligent control

3. AI-Driven Engineering (CAE–CAD & Design Automation)

- AI-assisted CAD modeling and simulation-driven design optimization
- Automated CAE workflows, surrogate models, and data-driven engineering pipelines
- Generative and optimization-based design methods

4. AI in Architecture, Construction & Built Environment

- Digital twins and AI-based planning for buildings and construction processes
- Generative design for sustainability, energy efficiency, and lifecycle optimization
- Integration of BIM, CAD, and simulation environments

5. Quantum Machine Learning

- Hybrid quantum–classical learning models for optimization and planning problems
- Quantum-enhanced machine learning for simulation, digital twins, and decision support

6. Advanced AI Methods: LLMs, Agents, RAG & Quantum ML

- Agent-based AI systems and multi-agent architectures for planning and coordination
- LLM- and RAG-based assistants for engineering, robotics, and digital twins
- Hybrid quantum–classical machine learning for optimization, simulation, and decision support

Your Profile:

- Enrolled student in AI, Robotics, Computer Science, or a related field
- Experience with Machine Learning, Computer Vision, or Mobility planning
- Familiarity with clustering methods, predictive modeling, and AI frameworks
- Basic knowledge of Python, Pytorch/TensorFlow, Open3D, or similar tools

What we offer:

- Hands-on experience in **real-world AI applications**
- A chance to work with cutting-edge **AI technology**
- A **dynamic and innovative** team culture with flat hierarchies
- Opportunities for creative freedom and access to a large **network of science and industry**
- Space for your own ideas and personal development
- **Cooperative** working environment
- Free muesli & coffee
... and much more!

Apply now to become part of the team!

Please send your application documents (a brief motivation letter, CV, and transcript of records) to Muhammad Saeed at personal@arena2036.de.

We look forward to your application!

ARENA2036 steht für „Active Research Environment for the Next generation of Automobiles“ und ist die Innovationsplattform für Mobilität und Produktion der Zukunft. Der Forschungscampus ist Teil der Förderinitiative „Forschungscampus – öffentlich-private Partnerschaft für Innovationen“ in Deutschland. ARENA2036 wird vom Bundesministerium für Bildung und Forschung (BMBF) unterstützt und wird als eingetragener Verein mit Mitgliedern aus Wissenschaft und Industrie geführt. Momentan befindet sich die ARENA2036 in der dritten Förderphase und zählt ca. 50 Mitglieder. Die Innovationsplattform mit Sitz in Stuttgart steht für eine Zusammenarbeit unter einem Dach zwischen Wissenschaft und Wirtschaft. ARENA2036 möchte ihren Beitrag zur aktiven Gestaltung von Arbeit, Mobilität und Produktion der Zukunft im Kontext der Digitalisierung leisten. Die Mitglieder sind in verschiedenen Disziplinen – von der Automobilbranche über Luft- und Raumfahrttechnik, Textil- und Materialforschung bis hin zur Arbeitswissenschaft – tätig.

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