

Enabling AI and Web3-Technologies to Pioneer a Digital Sustainable Future!

As the world increasingly turns to digital solutions for environmental sustainability, the potential for innovation and significant impact is immense. This master's thesis offers a unique opportunity for students passionate about information systems, informatics, and emerging technologies to address the urgent need for decarbonization.

You will explore how cutting-edge digital technologies and concepts can drive this transformation. This may include the use of Web3 technologies to enhance transparency and trust, the development of secure data spaces for seamless data exchange and collaboration, or the application of artificial intelligence to optimize energy efficiency and reduce carbon emissions. Engage with these transformative technologies and contribute to meaningful solutions that combat climate change and advance sustainability.

Selected technological approaches contributing to decarbonization include :

- **Explore Web3-Technologies:** Learn about the concept and the capabilities of Web3-Technologies (e.g., Blockchain and underlying zero-knowledge proofs or self-sovereign identities, etc.) to unlock new possibilities in decentralized energy systems.
- **Leverage Data Spaces:** Create novel business opportunities through the conceptualization of data spaces, enhancing data interoperability and collaboration between stakeholders.
- **Advance Business Operations with AI:** Leverage AI-driven solutions to predict and optimize energy consumption as well as improve the integration of renewable energy sources. Create intelligent solutions for the operation of energy systems that advance decarbonization, pushing the boundaries of innovation in the energy sector.

In collaboration with our expert faculty, you will define the scope and mission of your thesis, ensuring a personalized and impactful research experience. Together, we will select suitable research methods tailored to your interests and goals.

Are you ready to maximize the impact of your master's thesis? We provide comprehensive and individualized support to publish your findings in a scientific journal, giving you the opportunity to contribute to the academic community and enhance your professional profile. Join us in our mission to pioneer the future of digital innovation and make a lasting difference in the field!

Organizational Scope

- Start date: **anytime**
- Duration: **6 months**
- Supervision: **Prof. Dr. Sebastian Schwenen**
- Co-supervision: **Fraunhofer FIT**

Your Profile

- Strong interest in emerging digital technologies, affinity to programming and developing architectures
- Drive and passion for engaging in research
- Analytical and problem-solving capabilities
- Open-minded attitude with a proactive and collaborative working style
- Excellent written and verbal communication skills

Who we are & what we offer

- **Fraunhofer FIT is part of the world's leading applied research organization** | Fraunhofer FIT is a trailblazer in innovation and research excellence with a key focus on actively shaping the future of our energy system
- **Impact** | Accelerate the energy transition firsthand by working on topics that are timely and most relevant for achieving our energy and climate policy goals in Germany and Europe
- **Interdisciplinary teamwork** | Work in an interdisciplinary team with experienced research experts (doctoral candidates, post-doctoral researchers and/or professors)
- **Feedback** | Open feedback culture to advance your hard and soft skills in Information Systems Research, project management, and related fields

Sounds Great?

We are happy to receive your application: **Short motivation letter, resume, and transcript of records** via mail to leo.schick@fit.fraunhofer.de



Supervision | TU Munich
Prof. Dr. Sebastian Schwenen

Co-Supervision | Fraunhofer FIT
Prof. Dr. Jens Strüker



Co-Supervision | Fraunhofer FIT
Dr. Marc-Fabian Körner

