Fraunhofer Institute for Applied Information Technology (FIT)

Powering Progress: Transform the Energy Economy Toward Decarbonization and Digitalization!

The energy sector is at a pivotal moment in its evolution, facing the urgent need to transition towards sustainability to combat the escalating impacts of climate change. As the world seeks more sustainable solutions, we need to fundamentally transform how we supply, distribute, and consume energy. The digitalization of energy systems is essential for managing and coordinating resources efficiently and securely, driving the shift to a greener and more resilient energy economy.

This master's thesis offers a unique opportunity to dive into the intricate challenges and opportunities associated with the transformation of the energy economy toward decarbonization and digitalization. Students will explore innovative ways to integrate digital solutions into energy systems, optimizing operations and enhancing connectivity, e.g., by focusing on end-to-end digitalization, registry modernization, or decentralized asset registration. Therefore, students will be equipped with the toolkit to drive the transition towards a more sustainable, digitally empowered energy economy.

Selected topics related to the sustainable and digital transformation of the energy economy include:

- **End-to-End Digitalization:** Learn how to seamlessly implement and integrate digital processes across the energy value chain, improving efficiency and performance.
- **Modernization of Registries:** Discover methods to upgrade and connect energy registries, ensuring secure and transparent data management.
- **Integration of Decentralized Assets:** Explore innovative approaches to managing decentralized energy assets, promoting sustainability and resilience.
- **Enhanced Connectivity:** Develop strategies for improving connectivity and data exchange between stakeholders and assets in energy systems.

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, allowing you 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 the energy sector, focusing on digital innovation and sustainable solutions
- Drive and passion for engaging in research
- Analytical problem-solving capabilities
- Open-mined 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

Contact

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