

# Student Assistant

8-12 hours/week

## Project Description: InnOpTEM

Transmission system planning faces uncertainties due to the rise in supply-dependent plants. Operators use time-phased processes and computer-aided optimization to ensure system security. Within this project, we integrate and optimize switching state changes and redispatch measures through mathematical optimization, heuristics, and artificial intelligence methods. The Chair of Operations Research focuses on developing mathematical solutions for topology optimization in a network operation optimization framework.

This is a joint project with Gurobi, Amprion, the IAEW at RWTH and the FGH, and funded by the Federal Ministry for Economic Affairs and Climate Action.

## Job Description

There aren't many instances to test our algorithm for security-constrained optimal transmission switching on. In one commonly used library, the PowerGrid Library (Optimal Power Flow), there are just 66 instances.

There are many ways to generate additional instances ranging from statistical measures to graph-based machine learning algorithms.

## Qualifications

- Currently enrolled as a master's student in Computer Science or a related field.
- Proficient in programming languages such as Julia, Python, or similar.
- Knowledge within the field of statistics or machine learning.
- Familiarity with Git and, preferably, Bash.

## How to apply

Interested students are encouraged to submit their transcript of records and a brief motivation explaining their interest in the position to Tim Donkiewicz and Oliver Gaul via [hiwis-wanted@or.rwth-aachen.de](mailto:hiwis-wanted@or.rwth-aachen.de). The deadline for applications is **15.09.2024**.