Master's Thesis/HiWi-Position

Development and implementation of a tool for aggregation, analysis, error detection and correction of heating data

As part of the research project Energy Lab 2.0 ([http://www.elab2.kit.edu](http://www.elab2.kit.edu)) different energy data (electricity, heat, ...) of KIT Campus North are collected, processed, and analyzed. Thus, a tool should be developed that aggregates and analyses the collected heating data, as well as detects errors and corrects them with the help of machine learning methods.

Tasks:
- Overview of the literature on the aggregation and analysis of thermal load data as well as on error detection and correction of time series
- Development of suitable methods to aggregate the thermal load data
- Development of suitable methods to analyze the thermal load data
- Development of a machine learning approach to detect an correct errors in the thermal load data
- Implementation as tool in Python

Education, Experience, and Skills:
We are looking for motivated students who are interested in energy systems, data processing and machine learning. Basic knowledge of these topics is desirable.

- Study of computer science or mechanical engineering or electrical engineering or similar fields
- Experience in analysis and error detection of time series data
- Experience in machine learning methods for error correction of time series data
- Experience in Python programming useful

Philipp Zwickel, M.Sc.
Research Platform Energy
Phone: 0721 / 608 23758
E-mail: philipp.zwickel@kit.edu