Service development for HVAC efficiency

Motivation

Heating, Ventilation and Air Conditioning (HVAC) systems are systems that use electricity to heat and cool buildings. However, their performance in operation is sometimes lower than expected (e.g., due to installation issues, incorrect levels of refrigerants, wrong settings). Energy efficiency consultants and users can often improve the performance when such problems are known.

Task

Several research papers use statistical analysis and machine learning to identify faulty HVAC systems. The tasks include the systematic literature review on existing approaches to identify faulty HVAC systems with a focus on the type of predicted faults, the used algorithms, datasets, type of sensors, and model transferability.

Expected results

Students are expected to conduct a thorough literature review, categorize papers the find, and qualitatively elaborate on their findings.

Title English
- A literature review on the detection of faulty heating, ventilation, and air conditioning (HVAC) systems

Level: Master thesis

Methodology
- Literature review

Special prerequisites
- Basic knowledge on machine learning is a plus

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