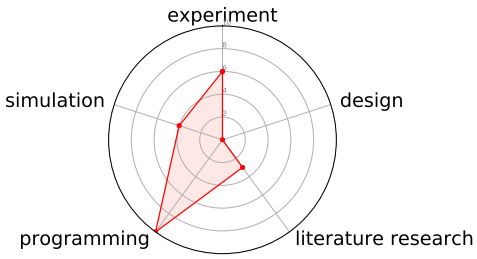
E.ON Energy Research Center | RWTH AACHEN UNIVERSITY

Master-/ Bachelor thesis:

Data Science: Occupancy detection by sensor fusion in a German Hospital

The building stock in the EU is one of the most energy-intensive sectors and has the greatest potential for energy savings. Up to 75% of buildings are estimated to be energy inefficient. Hospitals have particularly high energy needs. There is a significant need for energy-saving measures in this building sector. The aim of this research project is to develop practicable methods and control strategies for demand-based ventilation in the hospital environment and to evaluate the energy-saving potential of these concepts.

Your mission:



The determination of room occupancy in real-time is at the heart of demand-controlled ventilation in hospitals. In this thesis, you will develop a methodology to derive the occupancy of a room from real-time measurements from the Aachen University Hospital. The time series for the CO2, the motion in the room and the door opening state are available as input parameters. To extract knowledge from this data, you will employ tools from the field of data science. Experience with Python is advantageous but not mandatory.

Our profile:

The E.ON Energy Research Center at RWTH Aachen University deals with sustainable energy supply concepts that take account of technical feasibility as well as social and economic aspects. The reduction of primary energy consumption in buildings and an increase of indoor comfort are among the research tasks of the institute.

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