

## Master-Thesis:

# Pre-Trained Deep Learning Model for Semantic Annotation in Energy Domain

### Context:

Nowadays, individual devices and functional units will generate thousands of TB data annually and building-related systems must handle millions of TB data. Next generation building management systems will be processing amounts of heterogeneous data. Despite a number of architectures and underlying technological implementations of big data solutions for buildings' energy management have been emerged, semantic interoperability across data streams is still under research. Semantic metadata standards present a promising path to enabling interoperability by offering uniform descriptions of building resources to application developers and building operators. Several standardization efforts have arisen to address the ad-hoc nature of building metadata. Of these, Brick and Saref Ontology have seen adoption and investment from academic and industrial sources. But methods are still required to automatic mapping the raw data to the common data model. Therefore, different Deep Learning approaches are under research, which aims to accelerate the mapping process and reduces manual work.

### Tasks:

- Literature review of the state of the art method in pre-trained language model
- Development of Deep Learning model for automatic semantic annotation
- Evaluate the developed model with data in energy domain

### Your Profile:

- Computer engineering, electrical engineering or any related field
- Good programming skill and experience in Python
- Knowledge about NLP, Data modelling and Large Language Model are an advantage
- Interest in learning and testing

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