



Kolloquium zur Masterarbeit

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„Design and Implementation of a Multimodal Context Collection System to Monitor Electrical Appliances and Environmental Events“

This thesis covers all the steps that are involved in the deployment of Non Intrusive Load Monitoring (NILM) data acquisition. These steps among others include hardware configuration, deployment, environmental and energy data acquisition, features extraction and learning algorithms. The purpose of the project is to build an energy measurement software which enables not only to sense the electrical network; but also, at the same time, gather environmental aspects that surround the measured device such as electromagnetic field, temperature, humidity and sound, which may have an influence on the obtained measurements. The motivation behind the development of this framework is driven by the lack of datasets which provide information regarding the appliance as well as its surroundings. Such datasets are helpful for data labeling, algorithm event detection improvement and understanding the effect of downsampling on realised measurements. We can confirm that the deployment, configuration and data acquisition of our software is capable of obtaining energy measurements from the network at high frequency sampling rates. Machine Learning Algorithms, which are applied to our datasets, corroborate that the information acquisition and feature extraction of the software is valid among different measured devices, since they are able to distinguish each appliance.

**Mittwoch, 24. April 2019, 9:30 Uhr,
Seminarraum 210, IfI (D3), Am Regenbogen 15**