TU Clausthal

Informatik-Kolloquium

Freitag, den 05.02.2021, 15:30 Uhr,

https://webconf.tu-clausthal.de/b/and-jz2-7df

Antrittsvortrag zum

Forschungsprojekt:

Huichen Shu

"Interpretability of Sequence-to-Point Predictive Washing Machine Model"

Energy disaggregation is finding appliances running events from the total electricity load in the data set. Non-Intrusive Load Monitoring (NILM) is a branch that does not collect data from residents' meter or apartments. It is reasonable to utilize the computer that consistently improves performance. An algorithm in NILM, Sequence-to-Point Optimization (S2P) combines the latest algorithms and computer technology. It can automatically extract appliance events' vital features. However, as a "black box," we cannot use it without doubts. This project will analyze S2P on an easy-to-understand interpretable level. The training model's explanation with higher accuracy and generalization exposes the algorithm's working mechanism. Comparing the automatically detected features from S2P and existing appliances' features from metadata play a prominent role. In other words, this project will provide ways to describe how the S2P works and how it improves its accuracy and generalization. Understanding the functions of the network components is significant for well-performing modeling. This work opens the "blackbox" incompletely and explains the model's decision mechanism initially. It does explain the S2P decision-mechanism and help us to trust in it. We trust through understanding: why using important data as input is better; why different data sets contribute to models with various generalization levels in NILM; why and how S2P can automatically achieve feature extraction.

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