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Program

Chair: Susanne Saminger-Platz

9:00 T. Grubinger & G. Chasparis:
Online Transfer Learning for Climate Control in Residential Buildings

Online Transfer Learning for Climate Control in Residential Buildings

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Abstract: We present an online transfer learning framework for improving temperature predictions in residential buildings. In transfer learning, prediction models trained under a set of available data from a target domain (e.g., house with limited data) can be improved through the use of data generated from similar source domains (e.g., houses with rich data). Given also the need for prediction models that can be trained online (e.g., as part of a model-predictive-control implementation), this paper introduces generalized online transfer learning algorithm (GOTL). It employs a weighted combination of the available predictors (i.e., the target and source predictors) and guarantees convergence to the best weighted predictor. We further validate our results through experiments in climate control for residential buildings.