## Graduiertenkolloquium Angewandte Informatik

# Guided automated machine learning system

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The ever-growing demand for machine learning has led to the development of automated machine learning (AutoML) systems that can be used off the shelf by non-experts.
Further, the demand for ML applications with high predictive performance exceeds the number of ML experts and makes the development of AutoML systems necessary.
Automated Machine Learning tackles the problem of finding machine learning models with high predictive performance. Existing approaches assume that all data is available at the beginning of the training process (offline learning). They configure and optimize a pipeline of preprocessing, feature engineering, and model selection by choosing suitable hyperparameters in each pipeline step.
Furthermore, they assume that the user is fully aware of the choice and thus the consequences of the underlying metric (such as precision, recall, or F1-measure). By variation of this metric, the search for suitable hyperparameters and thus the adaption of algorithms can be tailored to the needs of the user.
With the creation of vast amount of data every day from all kinds of sources, our capability to process and understand these datasets in a single batch is not longer viable.
By training ML models incrementally (online learning) the flood of data can be processed sequentially within data streams.
However, if one assumes an online learning scenario, where an AutoML instance executes on evolving data streams, the question for the best model and its configuration remains open.
In this work, we address the personalization of AutoML in an offline learning scenario and the adaption of ML pipelines and their configuration to evolving data streams in an online learning scenario.
Furthermore, we propose a System to steer AutoML for individual end-users preferences by learning a designated ranking model from pairwise user preferences and using the latter as the target function for both the online and offline learning scenario.

**Termin: Freitag, 18.06.2021,14:00Uhr**
Ort:       Onlineveranstaltung
Zoom-Meeting beitreten
https://kit-lecture.zoom.us/j/69275480258?pwd=T3dJcVJiUkVXVENrZVZBRGwyRllaUT09
Meeting-ID: 692 7548 0258
Kenncode: 798886

Veranstalter:   Institut AIFB, Forschungsgruppe Web Science

Zu diesem Vortrag lädt das Institut für Angewandte Informatik und Formale Beschreibungsverfahren alle Interessierten herzlich ein.

A. Oberweis, H. Sack, A. Sunyaev, Y. Sure-Vetter (Org.), M. Volkamer, J. M. Zöllner