INVITATION TO THE LECTURE SERIES ARTIFICIAL INTELLIGENCE

Time: Tuesday January 7, 2020, 14:00 h
Place: Lecture Hall 1 (HS 1)

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Personalized Music Recommendations by Multimedia Mining and User Modeling

Users of social media platforms and smart devices nowadays generate millions of digital traces every day. This vast amount of user-generated content (text, audio, image, video) and user metadata (e.g., demographics, followers, Likes, contextual sensor data) holds an unprecedented wealth of information, which can be exploited for decent user modeling and in turn personalized recommendation systems. Doing so, however, requires devising and extracting computational features from content and metadata.

In this research talk, I will present several of our approaches to (i) define and infer such features from social media platforms and from smart devices, (ii) analyze the extracted features and relate them to user characteristics, such as personal preferences, personality traits, or emotions, using machine learning techniques, and (iii) build and integrate corresponding user models to improve personalized recommender systems. I will focus on the music domain, which has experienced a strong increase in attention over the past few years in the corresponding research communities.

More precisely, I will address (i) by introducing some of our user descriptors, e.g., for taste diversity, novelty, and mainstreaminess, on an individual and a country level. Regarding (ii), I will present our approach to and results of a large-scale analysis of music listening events (>1 billion created by 120,000 listeners) acquired from the music streaming platform Last.fm. Furthermore, I will introduce our machine learning approaches to predict personality traits from digital traces of Twitter and Instagram users, music taste from sensor data, and user demographics from music listening habits of Last.fm users. In addition, I will illustrate how findings from these analyses and results of the classification and regression approaches can be used to build comprehensive user profiles. Addressing (iii), I will eventually showcase how these profiles can yield an increase in performance and the level of personalization of music recommendation systems.

Host: Johannes Kofler
Institute for Machine Learning and LIT AI Lab

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