IUI'17 Companion-Workshop Summary for HUMANIZE'17

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Abstract
The first workshop on T**h**eory-Informed **U**ser **M**odeling for T**a**ilori**n**g and Personal**iz**ing Int**e**rfaces (HUMANIZE)[1] took place in conjunction with the 22nd annual meeting of the intelligent user interfaces (IUI)[2] community in Limassol, Cyprus on March 13, 2017. The goal of the workshop was to attract researchers from different fields by accepting contributions on the intersection of practical data mining methods and theoretical knowledge for personalization. A total of six papers were accepted for this edition of the workshop.

ACM Classification Keywords
H.5 Information interfaces and presentation (I.7); H.5.2 User Interfaces (D.2.2, H.1.2, I.3.6),Theory and methods

Author Keywords
Workshop Summary; User interfaces; Personalization; Data mining; Psychological theories

Introduction
When designing (user) interfaces, practitioners can rely on knowledge and experience about interfaces' intended users and their needs (in the form of theory-informed models, such as the user's cognitive style or personality). This

[1]https://humanize2017.wordpress.com/
[2]http://iui.acm.org/2017/

allows them to provide the optimal interface for their users. In contrast to this, a more data-driven approach is taken in fields such as recommender systems and information retrieval, without the need to rely on user knowledge.

Combining these two approaches (model-driven and data-driven) provides an interesting research direction. By relying on knowledge about what types of users require what type of interface, and by using data mining techniques to infer the types of users from interaction behavior, interfaces can be personalized in an informed, grounded way.

Advances in combining formal user models with data mining can be made in grossly two ways. On the one hand this can be done by identifying formal user models that can be used to base personalization on (such as cognitive style or personality). On the other hand this can be done by finding ways to infer these user models from data. These two ways complement each other and when combined can result in theory-informed personalization.

The HUMANIZE workshop combines theoretical knowledge for personalization and practical data mining methods, and in doing so provides a venue where researchers from different fields come together to share their thoughts and experience. In addition, the workshop will allow for an exploration of future opportunities in hopes of identifying possible links between the algorithmic side of behavioral analysis and the theoretical understanding of users for personalization.

A non-exhaustive list of topics for this workshop:

- Psychological theory that can be used for personalization (e.g., personality, domain knowledge, cognitive styles)
- Data mining methods to infer user profiles in terms of psychological models (e.g., personality inference from social media)
- How (user) interfaces can be tailored to better match certain user profiles (e.g., altering search results, interface elements ordering, visual vs. textual representations)
- User studies investigating one or more of the above points

Contributions

A wide range of topics are covered:

Games. Halfon et al. [1] used a game-based method to implicitly infer information about users. In their study they let participants play a game of blackjack and were able to identify distinct decision-making behavior related to personality traits. Harteveld and Sutherland [2] developed a gaming platform ("Mad Science") as a research environment to conduct experiments. Their platform allows researchers to personalize the research environment for their participants.

Location. Kumar et al. [4] analyzed Flickr pictures to model location characteristics. Their results show that they are able to distinguish photos taken by locals and pictures taken by tourists, based on image properties.

Education. Lee and Ferwerda [5] propose to use users' personality traits to personalize online educational environments. By incorporating users' personality, they hope to counteract cold-start problems in online educational environments and thereby increase engagement of the user.

Music. Schedl [6] proposes methods for music retrieval in order to make music search and discovery more appealing, more exciting, and more joyful for the user. The proposed methods foster serendipitous encounters with music and social interactions between users while browsing for music. Knees and Andersen [3] propose qualitative methods to inform the design process of systems. They argue that the inclusion of physical objects and hypothetical mock-ups

greatly informs the design process of future systems, sound search engines, and sound manipulation interfaces.

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