UMUAI SPECIAL ISSUE PROPOSAL

TENTATIVE TITLE : Special Issue on Personality in Personalized Systems

GUEST EDITORS:
Marko Tkalčič, Johannes Kepler University, Linz, Austria (marko.tkalcic@jku.at)
Daniele Quercia, Yahoo! Research, Barcelona, Spain (dquercia@yahoo-inc.com)
Sabine Graf, Athabasca University, Edmonton, Canada (sabineg@athabascau.ca)

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SCOPE
Personality has been found to significantly correlate with a number of real-world behaviors. It correlates with music taste: popular music tends to be significantly liked by extroverts, while people with a tendency to be less open to experience tend to prefer religious music and dislike rock music [Rawlings97]. Personality also impacts the formation of social relations [Selfhout10]: friends tend to be, to a very similar extent, open to experience and extrovert [Schrammel09]. Furthermore, there has been found a strong correlation between personality and how people prefer to learn, indicating that learning styles can be seen as a subset of personality [Furnham92, Jackson96]. Since psychological personality has been shown to affect, for example, preferences for interaction styles, learning, and for music genres in the physical world, one might conclude that the design of services in the online world (e.g., personalized user interfaces, music recommender systems, adaptive educational systems, games) might also benefit from personality studies.

That is why researchers have recently explored the extent to which personality traits impact the use of interactive and hypermedia systems. They, for example, found that personality is associated with specific preferences for music genres online, and that greatly impacts music information retrieval services [Rentfrow03]. Collaborative filtering techniques have also benefited from assessing users' personality traits [Hu10, Tkalcic09]. It has also been shown that users open to new experiences (one of the big five personality traits [Costa05, Goldberg06]) tend to prefer more diverse and serendipitous items (e.g. movies in [Wu13]). Furthermore, learning styles have been heavily used in educational systems to personalize courses in terms of structure and presentation of learning materials [Despotovic12, Graf09b, Popescu10]. In the context of games, Teng [Teng08], for example, found that personality seems to impact the motivation for playing online games. Also, certain personality traits have been found to correlate with communication styles and, as a consequence, the adoption of location-sharing social media [Page13].

The five-factor model of personality, or the big five, is the most commonly used set of personality concepts and one of the most reliable and comprehensive models of personality [Costa05, Goldberg06]. In this model, an individual is associated with five scores that correspond to the five main personality traits and that form the acronym of OCEAN: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism.

Other models of personality are, for example, the Four Temperaments [Keirsey98] (the

oldest general model), the Benziger brain type [Benziger92] (a work-related model), the Belbin team roles model [Belbin96], the Myers-Briggs types [Myers98] (general and team working model), the RIASEC vocational model [Holland97] or the Bartle types [Stewart11] (describing personalities in video games).

While traditionally personality traits are identified by asking people to fill-in a questionnaire, researchers have recently shown that personality traits can be extracted implicitly from the users' streams (e.g., tweets, facebook updates) without resorting to time-consuming questionnaires [Quercia11, Kosinski13]. Furthermore, the players' behavior in games has been investigated and can also provide information about a player's personality [vanLankveld11]. Similarly, several researchers have conducted studies on using data from learners' behavior in a course to automatically identify their learning styles [Dorça12, Graf09a, Özpolat09].

We believe that there's no better time than now to start gathering top-notch research in the field for three main reasons:
1) Effectiveness. When the ability to automatically predict personality traits from online data is coupled with concrete evidence of those traits greatly impacting online usage, it is clear that personality should play a central role in the research agenda of personalized systems.

2) Preliminary Signs of Interest. New workshops and tutorials on the topic have been featured in top-tier conferences, such as the tutorial on "Personality-based Recommender Systems" co-located with RecSys 2012 [Nunes12]; the EMPIRE workshop co-located with UMAP 2013 [empire13]; and the "Computational Personality Recognition Workshop" co-located with ICWSM 2013 [icwsm13].

3) Data Availability. Large datasets of user interaction data and personality annotations have been already made publicly available to the research community [Tkalcic13, mypersonality, Kosir11].

TOPICS
The topics of interest for the special issue include (but are not limited to):
- Personality models for personalized systems;
- Personality prediction/extraction/assessment from behavior and/or preference data in
  - games
  - multimedia content (e.g. music, films etc.)
  - social media
  - educational systems
  - business applications
  - other modalities (e.g. mobile devices etc.)
- Automatic prediction/extraction/assessment of other (e.g. lower-level or application-specific) personality factors such as
  - learning styles
  - cognitive styles
  - communication styles
  - thinking styles

- Privacy issues;
- Enhancing user/learner models with personality;
- Evaluation of personality-based personalized services;
- Novel applications considering personality including
  - personality in games
  - personality and learning styles in educational systems
  - personality and multimedia content
  - personality in social media
  - personality and recommender systems

SUGGESTED TIMELINE
2014-12 Extended abstract
2015-03 Full papers
2015-06 First round of reviews
2015-09 Revisions of papers
2015-12 Final notification
2016-01 Camera ready
2016-02 Publication

INDIVIDUALS/GROUPS INTERESTED IN SUBMITTING

Name(s)	URL	Topics
Neal Lathia, Cambridge University	http://www.cl.cam.ac.uk/~nkl25/	personality-augmented/aware music recommendation
Rong Hu, Pearl Pu, EPFL	http://hci.epfl.ch/members/rong/ http://hci.epfl.ch/members/pearl/	a practical personality-based recommendation method
Li Chen, Hong Kong Baptist University	http://www.comp.hkbu.edu.hk/~lichen/	personality and recommendation diversity
Mehdi Elahi, Francesco Ricci, Free University of Bolzano	http://www.informatik.uni-trier.de/~ley/pers/hd/e/Elahi:Mehdi http://www.inf.unibz.it/~ricci/	Personality-Based Active Learning in Recommender Systems
Jianqiang Shen, Oliver Brdiczka, PARC	https://www.parc.com/about/people/2605/jianqiang-shen.html https://www.parc.com/about/people/22/oliver-brdiczka.html	profiling and preparing meetings
Tingshao Zhu, Rui Gao, Dong Nie, Institute of Psychology, University of Chinese Academy of Sciences,	http://people.ucas.ac.cn/~tszhu?language=en http://ccpl.psych.ac.cn/en/index.php?title=NieDong http://ccpl.psych.ac.cn/en/index.php?title=GaoRui	personality prediction on social media
Ivan Cantador, Universidad Autónoma de Madrid	http://arantxa.ii.uam.es/~cantador/en/teaching-currentCourses.html	for several domains (movies, music, books) we have investigated: - Relations between user

		preferences and preferences - Identification and modeling of emotions from text, specifically from social annotations
Nadja DeCarolis, University of Bari	http://www.di.uniba.it/~nadja/	- personality and user behavior in interacting with ambient conversational interfaces, - some other results with personality and player behavior - we started a research that is trying to find relations among music - the way one dresses - personality
Ioannis Arapakis, Yahoo!	http://labs.yahoo.com/author/arapakis/	information retrieval and the way personality, among other factors, affects (or is affected by) the search process.
Marco de Gemmis, Gianni Semeraro, Pasquale Lops, Universita di Bari	http://www.di.uniba.it/~swap/index.php?n=Membri.Degemmis http://www.di.uniba.it/~swap/index.php?n=Membri.Semeraro http://www.di.uniba.it/~swap/index.php?n=Membri.Lops	impact of user personality on the perception of recommendations (in particular, in the fashion domain).
Nava Tintarev Matt Dennis Judith Masthoff, University of Aberdeen	http://homepages.abdn.ac.uk/n.tintarev/pages/ http://homepages.abdn.ac.uk/mgdennis/pages/w/ http://homepages.abdn.ac.uk/j.masthoff/pages/	Adapting Recommendation Diversity to Openness to Experience: A Study of Human Behaviour.

The researchers in the above table have explicitly expressed their willingness to submit and the rough topic of their submissions via email. We keep these emails and can provide them as proof.

REFERENCES

[Belbin96] Belbin, M., Management Teams: Why They Succeed or Fail, Butterworth-Heinemann (1996)

[Benziger92] Benziger K., Sohn A., The Art of Using Your Whole Brain: Extroversion, Introversion & Adaption, K B a Pub (June 1992)

[Costa05] P. Costa and R. Mccrae. The Revised NEO Personality Inventory (NEO- PI-R). SAGE Publications, 2005.

[Despotovic12] Despotović-Zrakić, M., Marković, A., Bogdanović, Z., Barać, D., & Krčo, S. (2012). Providing Adaptivity in Moodle LMS Courses. Educational Technology & Society, 15(1), 326-338.

[Dorça12] Dorça, F. A., Lima, L. V., Fernandes, M. A., & Lopes, C. R. (2012). Comparing strategies for modeling students learning styles through reinforcement learning in adaptive and intelligent educational systems: An experimental analysis. Expert Systems with Applications, 40(6), 2092–2101.

[empire13] EMPIRE 2013 webpage, http://empire2013.wordpress.com/

[Furnham92] Furnham, A. (1992). Personality and learning style: A study of three instruments. *Personality and Individual Differences*, 13(4), 429–438.

[Goldberg06] L. Goldberg, J. Johnson, H. Eber, R. Hogan, M. Ashton, R. Cloninger, and H. Gough. The international personality item pool and the future of public-domain personality measures. Journal of Research in Personality, 40, February 2006.

[Graf09a] Graf, S., Kinshuk, & Liu, T.-C. (2009). Supporting teachers in identifying students' learning styles in learning management systems: An automatic student modelling approach. Educational Technology & Society, 12 (4), 3-14.

[Graf09b] Graf, S., Lan, C. H., Liu, T.-C., & Kinshuk (2009). Investigations about the effects and effectiveness of adaptivity for students with different learning styles. In Proceedings of the IEEE International Conference on Advanced Learning Technologies. IEEE CS, pp. 415-419.

[Holland97] Holland, J.L.: Making vocational choices: A theory of vocational personalities and work environments, vol. 3. Psychological Assessment Resources (1997)

[Hu10] Hu, R., & Pu, P. (2010). Using Personality Information in Collaborative Filtering for New Users. Recommender Systems and the Social Web, 17. Retrieved from http://www.dcs.warwick.ac.uk/~ssanand/RSWeb_files/Proceedings_RSWEB-10.pdf#page=23

[icwsm13] Computational Personality Recognition (Shared Task) Workshop website, http://www.icwsm.org/2013/program/workshop/

[Jackson96] Jackson, C. J., & Lawty-Jones, M. (1996). Explaining the overlap between personality and learning styles. Personality and Individual Differences, 20, 293–300.

[Keirsey98] Keirsey, D. (1998). Please Understand Me II: Temperament, Character, Intelligence, Prometheus Nemesis

[Kosinski13] Kosinski, M., Stillwell, D., & Graepel, T. (2013). Private traits and attributes are predictable from digital records of human behavior. Proceedings of the National Academy of Sciences, 2–5. doi:10.1073/pnas.1218772110

[Kosir11] Košir, Andrej, Odic, Ante, Kunaver, Matevž, Tkalcic, Marko, Tasic, Jurij F. Database for contextual personalization. Elektrotehniški vestnik, 2011, vol. 78, no. 5, pages. 270-274

[Myers98] Myers, Isabel Briggs, Mary H. McCaulley, Naomi Quenk, and Allan Hammer. (1998) *MBTI Handbook: A Guide to the development and use of the Myers-Briggs Type Indicator* Consulting Psychologists Press

[mypersonality] The myPersonality Project Website, http://mypersonality.org/wiki/doku.php

[Nunes12] Maria Augusta S.N. Nunes and Rong Hu. (2012). Personality-based recommender systems: an overview. In Proceedings of the sixth ACM conference on Recommender systems (RecSys '12). ACM, New York, NY, USA, 5-6. http://doi.acm.org/10.1145/2365952.2365957

[Özpolat09] Özpolat, E., & Akar, G.B. (2009). Automatic detection of learning styles for an e-learning system. Computers & Education, 53 (2), 355–367.

[Page13] Page, X., Knijnenburg, B. P., & Kobsa, A. (2013). FYI: communication style preferences underlie differences in location-sharing adoption and usage. Proceedings of the 2013 ACM international joint conference on Pervasive and ubiquitous computing - UbiComp '13, 153. doi:10.1145/2493432.2493487

[Popescu10] Popescu, E. (2010). Adaptation provisioning with respect to learning styles in a Web-based educational system: an experimental study. Journal of Computer Assisted Learning, 26(4), 243–257. DOI: 10.1111/j.1365-2729.2010.00364.x

[Quercia11] Quercia, D., Kosinski, M., Stillwell, D., & Crowcroft, J. (2011). Our Twitter Profiles, Our Selves: Predicting Personality with Twitter. In 2011 IEEE Third Int'l Conference on Privacy, Security, Risk and Trust and 2011 IEEE Third Int'l Conference on Social Computing (pp. 180–185). IEEE. doi:10.1109/PASSAT/SocialCom.2011.26

[Rawlings97] D. Rawlings and V. Ciancarelli. Music Preference and the Five-Factor Model of the NEO Personality Inventory. Psychology of Music, (2), October 1997.

[Rentfrow03] Rentfrow, P. J., & Gosling, S. D. (2003). The do re mi's of everyday life: The structure and personality correlates of music preferences. Journal of Personality and Social Psychology, 84(6), 1236–1256. doi:10.1037/0022-3514.84.6.1236

[Selfhout10] M. Selfhout, W. Burk, S. Branje, J. Denissen, M. van Aken, and W. Meeus. Emerging Late Adolescent Friendship Networks and Big Five Personality Traits: A Social Network Approach. Journal of Personality, 78(2):509–538, 2010.

[Schrammel09] J. Schrammel, C. Köffel, and M. Tscheligi. Personality traits, usage patterns and information disclosure in online communities. In Proceedings of the 23rd British HCI Group Annual Conference on People and Computers: Celebrating People and Technology (BCS-HCI), September 2009.

[Stewart11] Bart Stewart, Personality And Play Styles: A Unified Model, 2011, http://www.gamasutra.com/view/feature/134842/personality_and_play_styles_a_.php

[Teng08] Teng, C.-I. (2008). Personality Differences between Online Game Players and Nonplayers in a Student Sample. CyberPsychology & Behavior. 11 (2), 232-234. doi:10.1089/cpb.2007.0064

[Tkalcic09] Tkalčič, M., Kunaver, M., Tasič, J., & Košir, A. (2009). Personality Based User Similarity Measure for a Collaborative Recommender System. 5th Workshop on Emotion in Human-Computer Interaction-Real World Challenges, 30. Retrieved from http://slavnik.fe.uni-lj.si/markot/uploads/Main/2009_Tkalcic_HCI.pdf

[Tkalcic13] Tkalčič, M., Košir, A., & Tasič, J. (2013). The LDOS-PerAff-1 corpus of facial-expression video clips with affective, personality and user-interaction metadata. Journal on Multimodal User Interfaces, 7(1-2), 143–155. doi:10.1007/s12193-012-0107-7

[vanLankveld11] van Lankveld, G., Spronck, P., van den Herik, J., & Arntz, A., (2011) Games as personality profiling tools. Proceedings of the IEEE Conference on Computational Intelligence and Games, IEEE, pp.197-202. doi: 10.1109/CIG.2011.6032007

[Wu13] Wu, W., Chen, L., & He, L. (2013). Using personality to adjust diversity in recommender systems. Proceedings of the 24th ACM Conference on Hypertext and Social Media - HT '13, (May), 225–229. doi:10.1145/2481492.2481521