ABIS 2025 - International Workshop on Personalization and Recommendation

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Abstract

ABIS is an international workshop, organized by the SIG on Adaptivity and User Modeling in Interactive Software Systems of the German Gesellschaft für Informatik. For more than 25 years, the ABIS Workshop has been a highly interactive forum for discussing the state of the art in personalization, user modeling, and related areas. ABIS 2025's focus will be on the topics of personalization and recommendation within the areas of Computer-Supported Cooperative Work (CSCW) (i.e., support of individuals who work organized in groups), Cross-Reality (XR) Interaction (e.g., transitions inside the reality-virtuality continuum), and/or AI applications for personalization purposes. To discuss such questions, our workshop aims to bring together researchers and practitioners who are interested in the general personalization domain, and/or in our SIG's current focus. Our goal is to identify current issues and future directions of research and foster future development of the discipline and collaborations.

CCS Concepts

• **Information systems** → **Personalization**; *Collaborative filtering*; • **Human-centered computing** → *Computer supported cooperative work*; *Mixed / augmented reality*; *Virtual reality*.

Keywords

Personalization, Recommendation, XR, CSCW

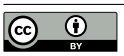
1 Motivation

User modeling and adaptive systems deal with creating and maintaining a user model to adapt interactive systems [1]. User models can be inferred from implicitly observed user behavior or explicitly entered information, such as the user's profile data, the user's current location, or items that the user browsed, searched, tagged, or bought earlier [5]. Furthermore, recent advances in pattern detection make implicit, measurable data, mostly originating from diverse sensors, good candidates for intelligent mechanisms regarding personalization. Applications of personalization include recommendations of items, location-based services, updates on friend activities, interest-based portal sites, educative games, and personalized guidance or help.

With the ongoing transition from classical computing devices to ubiquitous environments [3], the need for more and better user modeling and personalization to adapt to changing contexts in various situations is even more important. Especially for Augmented (AR) and Virtual Reality (VR)-equipped devices that are currently gaining momentum in various application domains, the aspects of personalization and recommendation pose new challenges, including privacy problems and questions of user control [6]. Such XR Systems may draw wrong conclusions about a user's spatial actions, limit functionality due to badly designed personalized menus, or may inadvertently disclose sensitive information to others [2].

Furthermore, the transition away from classical computing enables more flexible and spontaneous collaboration with others through always-on personal devices. The field of CSCW as a whole has seen rapid changes and established knowledge was challenged by modern workplaces (New Work). However, our experiences in previous years show that technologically-mediated communication and collaboration are still subpar to face-to-face encounters in most situations, which is why better technological support is needed. On many occasions, this support—which can be formative, ad-hoc, as well as summative—should be tailored to both individuals' and groups' needs.

Finally, the combination of CSCW and XR Interaction enables new forms of collaboration such as collaboration across the reality-virtuality continuum but also poses new challenges with regards to personalization and recommendation. Important questions are still



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up for debate and hint at a need for personalization approaches: When to do which task in which reality? How to coordinate and personalize the tasks optimally across realities and spaces?

In addition, the user experience is becoming more important in a mobile and connected world. It may not be only important to deliver the absolute best recommendations but to have fast and "good enough" recommendations that support users in navigating through the real world on a daily basis, and helps them making decisions on which activities to carry out or transactions to perform [4]. On the one hand, there is a battle for users' attention. On the other hand, the cost of wrong adaptation is very high, users may quickly switch to different applications, platforms and services if they are getting annoyed.

Personalization does not need to be limited to generating lists of recommendations: adaptations such as personalized maps, tailored menus, link annotation, and scripting potentially have a greater effect on the user experience. A particular design issue is the explanation of why items are recommended, or which interface elements have been adapted – and how this can be made undone if needed. And how can one encourage users to inspect and adjust their user profiles, collected information, and privacy settings?

2 Topics

As outlined in Section 1, the workshop welcomes a range of topics of interest, not necessarily concerned with this year's focus on personalization in CSCW-XR and using AI for personalization purposes, including but not limited to:

- *Personalization and Recommendation*: Personalization applications exist across various domains, from e-learning to online retail, automotive domains, assistance for elderly or handicapped, or mobile computing scenarios. What are suitable use cases for meaningful personalization? What uniform patterns are visible across domains?
- *AI-fueled Personalization*: By leveraging the large amounts of available data, AI has the potential to enhance existing personalization approaches across various domains. What can recent advances in AI (e.g., LLMs) bring to the table, when it comes to personalization?
- *Moving the Needle on the Reality/Virtuality Continuum*: Individuals differ highly in their preferences regarding the usage of virtual and augmented reality interaction. Task requirements and the novelty of the technologies make a successful interaction challenging. How can personalization be used to improve successful interactions across the continuum?
- *Personalization for Groups*: Personalized support for groups can help in our contemporary, inter-connected workplaces: topics include adaptive ad-hoc support for meetings, suggestions of suitable collaboration partners, and similar approaches (for an overview, see [7]).
- *Adaptive Support for Learning and Teaching*: Tailored learning experiences can benefit knowledge acquisition and learning. However, adaptive supports should account for various factors, including individual learning styles and collaborative environments. What are methods and tools for individual and collaborative learning support and how do they affect the users?
- *Serendipity, Bubbles, and Long Tail*: Personalization is in latent danger of strictly limiting content to individual preferences, effectively, preventing the chance to find interesting items that are part of the long tail. What can be done to prevent resulting bubbles?
- *Privacy Issues*: With advances in personalization, users' concerns over transparency, user control, and data scrutability become even more important to address. How can personalization systems provide transparency and ensure ethical use of the data without overwhelming users with complexity?

3 Workshop Mode and Activities

This year's edition of the ABIS workshop is planned as a half-day on-site event in conjunction with the MuC 2025 conference in Chemnitz, Germany. The workshop will be split into two parts: The first part of the workshop will be devoted to the presentation of scientific work addressing concepts, ongoing developments, and empirical evaluations within the thematic scope. To engage participants with the broader scope of ABIS research, we plan to have a keynote speech and possibly a panel discussion. The second part of the workshop will focus on networking and, in particular, the discussion of a research agenda. We plan to take and classify notes for this interactive part of the workshop. Next, single topics will be discussed in smaller groups in order to characterize important elements, find main opportunities, and identify pain points for the agenda for future research, which we will put together afterward and make accessible via the workshop website[1], as a position paper or opinion piece (e.g., via Communications of the ACM).

We welcome participants both from academia and industry. The target audience of the workshop are, for instance, HCI practitioners and developers, as well as researchers including (PhD) students.

4 Call for Participation

We invite participation in the ABIS 2025 half-day workshop on adaptivity and user modeling, which is held on-site in conjunction with the MuC 2025 conference in Chemnitz, Germany. The goals of this workshop are 1) strengthening the community of researchers (also within the German Gesellschaft für Informatik) and the HCI section for this important and emerging area of research by fostering knowledge exchange and facilitating networking, 2) providing a platform to present and discuss scientific work on recent developments relevant with respect to the topics of the workshop, and 3) discussing a research agenda for future work on personalization and adaptation approaches in these diverse fields.

The workshop will be open to everyone who is interested, but we also invite non-anonymous submissions in the form of demo papers of 1-2 pages, late-breaking results papers of 2-4 pages, and full papers of 4-6 pages in length (excluding references), submitted via ConfTool until June 10th, 2025 - the exact dates will be synchronised with other MuC workshops. Papers will be peer-reviewed by at least two reviewers (single-blind). In accordance with the timeline published for MuC 2025, acceptance notifications will be sent out in early July, 2025. Camera-ready versions will be due July 18th, 2025, at the latest. Accepted workshop papers will be published in the GI Digital Library. Authors of accepted demo, late-breaking results, and

[1] https://fg-abis.gi.de/veranstaltung/abis-2025/

full papers will be invited to orally present their work at the workshop, including discussion with the audience. At least one author of each accepted submission must attend the workshop and must register for at least one day of the conference. More information (e.g., topics) is available at https://fg-abis.gi.de/veranstaltung/abis-2025/.

5 Organizers

The 2025 edition of the workshop will be organized by the following members of the SIG Adaptivität und Benutzermodellierung in interaktiven Softwaresystemen (ABIS):

- **Thomas Neumayr** recently finished his PhD (topic: hybrid collaboration) and is an assistant professor with the University of Applied Sciences Upper Austria. One of his main research interests is the intersection between personalization, HCI, and CSCW.
- **Enes Yigitbas** is competence area manager for "Human-Centered Digitality" at Software Innovation Lab of Paderborn University, Germany. His main research interests are at the intersection of HCI, Software Engineering, and Machine Learning, especially focusing on the design, development, and evaluation of XR-based learning and assistance systems.
- **Mirjam Augstein** is a professor for Personalized and Collaborative Systems at the University of Applied Sciences Upper Austria. Her main research interests are related to personalized and collaborative interaction, including adaptive support for individuals and teams in interactive environments.
- **Eelco Herder** is an associate professor in the Interaction Group at Utrecht University, the Netherlands. His research focuses on how users and current (commercial) recommender systems respond to one another, and which mechanisms help to encourage users to actively choose what they want instead of passively following suggestions.
- **Laura Stojko** is a PhD student and lecturer in HCI at the University of the Bundeswehr Munich in Germany. Her research focuses on personalization, and CSCW within the context of large interactive semi-public displays.
- **Jannis Strecker** is a PhD student in Computer Science at the University of St. Gallen in Switzerland. He studies how ubiquitous personalization systems can make people's interactions with their environment more efficient, safer and more inclusive, and how these systems can be built in a responsible and societally beneficial way.
- **Julia Seitz** is a post-doctoral researcher at Karlsruhe Institute of Technology (KIT), Germany. Her research focuses on how biosignals can be used to detect negative user states in video meetings and how adaptive support interventions can be designed based on these biosignals.

References

[1] Peter Brusilovsky. 1998. *Methods and Techniques of Adaptive Hypermedia.* Springer Netherlands, Dordrecht, 1–43. https://doi.org/10.1007/978-94-017-0617-9_1

[2] Jaybie A. De Guzman, Kanchana Thilakarathna, and Aruna Seneviratne. 2020. Security and Privacy Approaches in Mixed Reality: A Literature Survey. *Comput. Surveys* 52, 6 (Nov. 2020), 1–37. https://doi.org/10.1145/3359626

[3] Richard Harper, Tom Rodden, Yvonne Rogers, and Abigail Sellen. 2008. *Being Human: Human-Computer Interaction in the Year 2020.* Microsoft Research Ltd, 7 J J Thomson Avenue, Cambridge, CB3 0FB, England. https://www.microsoft.com/en-us/research/publication/being-human-human-computer-interaction-in-the-year-2020/

[4] Eelco Herder, Laura Stojko, Jannis Strecker, Thomas Neumayr, Enes Yigitbas, and Mirjam Augstein. 2024. Towards new realities: implications of personalized online layers in our daily lives. *i-com* 23, 2 (2024), 221–229.

[5] Folasade Olubusola Isinkaye, Yetunde O Folajimi, and Bolande Adefowoke Ojokoh. 2015. Recommendation systems: Principles, methods and evaluation. *Egyptian informatics journal* 16, 3 (2015), 261–273.

[6] Shyong K "Tony" Lam, Dan Frankowski, and John Riedl. 2006. Do you trust your recommendations? An exploration of security and privacy issues in recommender systems. In *Emerging Trends in Information and Communication Security: International Conference, ETRICS 2006, Freiburg, Germany, June 6-9, 2006. Proceedings.* Springer, Springer, Berlin, Heidelberg, Heidelberg, Germany, 14–29.

[7] Thomas Neumayr and Mirjam Augstein. 2020. A Systematic Review of Personalized Collaborative Systems. *Frontiers in Computer Science* 2 (2020), 1–23. https://doi.org/10.3389/fcomp.2020.562679 Publisher: Frontiers.