

# Curriculum Vitae: Markus Schedl

## PERSONAL INFORMATION

Family name, First name: Schedl, Markus  
ORCID identifier: 0000-0003-1706-3406  
Date of birth: June 9, 1980  
Nationality: Austrian  
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Google Scholar profile: <https://scholar.google.com/citations?user=TQR8qIEAAAAJ>

## CURRENT POSITION

2019– **Full Professor**, Johannes Kepler University Linz (JKU), Institute of Computational Perception, Head of Multimedia Mining and Search Group; Head of Human-centered AI Group at LIT AI Lab

## PREVIOUS POSITIONS

2014–2019 **Associate Professor**, JKU, Institute of Computational Perception  
2013–2019 **Lecturer**, University of Applied Sciences Salzburg (FH Salzburg)  
2009–2014 **Assistant Professor**, JKU, Institute of Computational Perception  
2005–2009 **Research Assistant**, JKU, Institute of Computational Perception  
2004–2005 **Researcher**, Austrian Research Institute for Artificial Intelligence (OFAI)

## EDUCATION

2014 **Habilitation** in Applied Computer Science, JKU  
2010 **Master** in International Business Administration, Vienna Univ. of Economics and Business  
2008 **PhD** in Computer Science (with distinction), Institute of Computational Perception, JKU  
“Automatically Extracting, Analyzing, and Visualizing Information on Music Artists from the World Wide Web”, Supervisor: Prof. Dr. Gerhard Widmer  
2004 **Master** in Computer Science, Vienna University of Technology (TU Wien)

## BIBLIOMETRIC INDICATORS

Number of publications in refereed journals / proceedings: 42 / 205  
Number of books / book chapters: 2 / 7  
Number of citations (according to Google Scholar): > 7,500  
H-index (according to Google Scholar): 45

## FUNDING RAISED

Until now, I managed to secure funding worth more than two million EUR for my research groups, both from *basic and applied research funding agencies*, e.g., Austrian Science Fund (FWF), Austrian Research Promotion Agency (FFG), and European Commission (EC), and through *industrial collaborations*, e.g., with Siemens, OKTAV, and Jobiqo. I also served as principal investigator of several national projects and as Co-PI of the EU FP7 project PHENICX.

## ORGANIZATION OF SCIENTIFIC MEETINGS (Selection)

2022 PC Chair, International Conference on Web Engineering (ICWE)  
2020 PC Chair, International Society for Music Information Retrieval Conference (ISMIR)  
2019 Doctoral Symposium Chair, ACM Conference on Recommender Systems (RecSys)  
2018 Senior Academic Organizer, ACM Recommender Systems Challenge  
2018–2019 Track Chair, Conference on User Modelling, Adaptation, and Personalization (UMAP)  
2014–2015 Organizer, International Workshop on Social Media Retrieval and Analysis (SoMeRA)  
2013–2018 Task Organizer, MediaEval Benchmarking Initiative for Multimedia Evaluation

## MEMBERSHIPS IN EDITORIAL BOARDS AND PROGRAM COMMITTEES, REVIEWING ACTIVITIES (Selection)

Note: Journals' IF values indicate the 5-year impact factors according to Web of Science by Clarivate Analytics.

2022–	Editorial Board, ACM Transactions on Recommender Systems
2017–	Editorial Board, Transactions of the International Society for Music Information Retrieval
2014–	Editorial Board, International Journal of Multimedia Information Retrieval; IF=2.080
2018–2019	Editorial Board (Guest), User Modeling and User-Adapted Interaction (UMUAI); IF=4.887
2015–2016	Editorial Board (Guest), ACM Trans. on Intelligent Systems and Technology (TIST); IF=4.031
2021–	Reviewer, Proceedings of the National Academy of Sciences of the USA; IF=12.291
2021–	Reviewer, Nature Scientific Reports; IF=5.134
2020–	Reviewer, IEEE Transactions on Affective Computing; IF=9.047
2019–	Reviewer, Elsevier Artificial Intelligence; IF=7.525
2016–	Reviewer, ACM Computing Surveys; IF=10.024
2015–	Reviewer, Journal of the Association for Information Science and Technology; IF=3.854
2013–	Reviewer, IEEE Transactions on Multimedia; IF=6.410
2020	Program Chair, International Society for Music Information Retrieval Conference (ISMIR)
2019	Area Chair, ACM Multimedia
2018–	PC Member, The Web Conference (formerly World Wide Web Conference)
2017	PC Member, ACM Conference on Recommender Systems (RecSys)
2017	PC Member, ACM International Conference on Multimedia Retrieval (ICMR)
2010–	PC Member, International Society for Music Information Retrieval Conference (ISMIR)

## AWARDS AND PRIZES (Selection)

2020	Best Demo Award, ACM International Conference on Multimedia Retrieval
2019	Best Short Paper Award, International Conference on Content-based Multimedia Indexing
2017	Best Paper Award, International Conference on Advances in Mobile Computing & Multimedia
2006	Runner-up for Best Paper Award, ACM Multimedia
2019	Best Reviewer Award, ACM Recommender Systems (RecSys)
2021	3 <sup>rd</sup> Place (Academic), ACM RecSys Challenge
2017	1 <sup>st</sup> Place, MediaEval Task: AcousticBrainz Genre Classification
2012	1 <sup>st</sup> Place, MediaEval Affect Task: Violent Scenes Detection
2011 – 2014	1 <sup>st</sup> Place, MIREX Task: Audio Music Similarity and Retrieval

## IMPORTANT PUBLICATIONS (in chronological order)

### Peer-reviewed journals:

[J1] Kowald D., Muellner, P., Zangerle, E., Bauer, C., Schedl, M., and Lex, E. *Support the Underground: Characteristics of Beyond-Mainstream Music Listeners*, EPJ Data Science 10(14):1-26, 2021.

(<https://doi.org/10.1140/epjds/s13688-021-00268-9>)

[J2] Vall, A., Dorfer, M., Eghbal-zadeh, H., Schedl, M., Burjorjee, K., and Widmer, G. *Feature-Combination Hybrid Recommender Systems for Automated Music Playlist Continuation*, User Modeling and User-Adapted Interaction – The Journal of Personalization Research 29(2):527-572, 2019.

(<https://doi.org/10.1007/s11257-018-9215-8>)

[J3] Liu, M., Hu, X., and Schedl, M. *The Relation of Culture, Socio-economics, and Friendship to Music Preferences: A Large-scale, Cross-country Study*, PLOS ONE 13(12):1-29, 2018.

(<https://doi.org/10.1371/journal.pone.0208186>)

[J4] Schedl, M., Gómez, E., Trent, E.S., Tkalčič, M., Eghbal-Zadeh, H., and Martorell, A. *On the Interrelation between Listener Characteristics and the Perception of Emotions in Classical Orchestra Music*, IEEE Transactions on Affective Computing, 9(4):507-525, 2018.

(<https://doi.org/10.1109/TAFFC.2017.2663421>)

[J5] Schnitzer, D., Flexer, A., Schedl, M., and Widmer, G. *Local and Global Scaling Reduce Hubs in Space*, Journal of Machine Learning Research, 13:2871-2902, 2012.

(<https://dl.acm.org/doi/10.5555/2503308.2503333>)

### Peer-reviewed conference proceedings:

[C1] Rekabsaz, N., Kopeinik, S., and Schedl, M. *Societal Biases in Retrieved Contents: Measurement Framework and Adversarial Mitigation of BERT Rankers*, Proceedings of the 44<sup>th</sup> International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2021), Online, July 2021.

(<https://doi.org/10.1145/3404835.3462949>)

[C2] Skowron, M., Ferwerda, B., Tkalčić, M., and Schedl, M., *Fusing Social Media Cues: Personality Prediction from Twitter and Instagram*, Proceedings of the 25<sup>th</sup> International World Wide Web Conference (WWW), Montreal, Canada, April 2016.

(<https://doi.org/10.1145/2872518.2889368>)

[C3] Schedl, M., and Hauger, D. *Tailoring Music Recommendations to Users by Considering Diversity, Mainstreamness, and Novelty*, Proceedings of the 38<sup>th</sup> Annual International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR), Santiago, Chile, August 2015.

(<https://doi.org/10.1145/2766462.2767763>)

[C4] Kaminskas, M., Ricci, F., and Schedl, M. *Location-aware Music Recommendation Using Auto-Tagging and Hybrid Matching*, Proceedings of the 7<sup>th</sup> ACM Conference on Recommender Systems (RecSys), Hong Kong, China, October 2013.

(<https://doi.org/10.1145/2507157.2507180>)

[C5] Knees, P., Schedl, M., Pohle, T., and Widmer, G. *An Innovative Three-Dimensional User Interface for Exploring Music Collections Enriched with Meta-Information from the Web*, Proceedings of the ACM Multimedia 2006, Santa Barbara, California, USA, October 2006. **Runner-up for Best Paper Award**

(<https://doi.org/10.1145/1180639.1180652>)

## IMPORTANT RESEARCH RESULTS

Our major research achievements can be categorized into: (1) *substantial findings about the interplay between user-generated data, individual user traits, and algorithmic performance of recommender systems* and (2) *novel approaches to multimedia retrieval, recommendation, and browsing*. In [J3, J4], we thoroughly analyze the complex interplay between music preferences and perception on the one hand and user traits on the other. [J3] reveals significant correlations between cross-country music preferences and culture, language, and density of friendship networks; [J4] uncovers substantial influences of personality traits, musical education, and demographics on emotions perceived in music. In [C2], we present a multimodal and multi-source machine learning model that can predict users' personality traits from the textual, visual, and meta data of their shared content more accurately than previous single-source approaches. In [J1], we characterize and group listeners of non-mainstream music according to their music taste, and show that the quality of recommendations created by different algorithms significantly varies between user groups.

Selected works in which we propose new algorithms for recommendation, retrieval, and browsing include [J2], where we introduce two novel hybrid *music recommender systems* for automatic playlist continuation, which can integrate any type of additional (multimodal) content features in a flexible way. In [C1], we uncover substantial gender biases in the retrieval results of state-of-the-art web search algorithms, and we propose a novel method to mitigate such biases and create a *fair web search engine*. In [C3], we show for the first time that integrating users' taste diversity, mainstreamness, and novelty improves music recommendation. In [C4], we propose a location-aware music recommender system that leverages knowledge graphs, multimedia content, and tags. In [J5], we propose a remedy for the “hubness” problem that affects similarity computation in *information retrieval systems*. In [C5] (runner-up for best paper award), we propose a novel *intelligent audiovisual browsing interface* to automatically organize music collections and let users explore them in multimodal ways.