T2: Music Information Retrieval: Overview, Recent Developments and Future Challenges

This tutorial provides a survey of the field of Music Information Retrieval (MIR), that aims, among other things, at automatically extracting semantically meaningful information from various representations of music entities, such as audio, scores, lyrics, web pages or microblogs. The tutorial is designed for students, engineers, researchers, and data scientists who are new to MIR and want to get introduced to the field.

The tutorial will cover some of the main tasks in MIR, such as music identification, transcription, search by similarity, genre/mood/artist classification, query by humming, music recommendation, and playlist generation. We will review approaches based on content-based and context-based music description and show how MIR tasks are addressed from a user-centered and multicultural perspective. The tutorial will focus on latest developments and current challenges in the field.

Emilia Gómez (emiliagomez.wordpress.com) is an Associate Professor (Serra-Hunter Fellow) at the Music Technology Group, Department of Information and Communication Technologies, Universitat Pompeu Fabra in Barcelona, Spain. She graduated as a Telecommunication Engineer at Universidad de Sevilla (Spain) and she studied classical piano performance at Seville Conservatoire of Music. She then received a DEA in Acoustics, Signal Processing and Computer Science applied to Music (ATIAM) at IRCAM, Paris (France) and a Ph.D. in Computer Science and Digital Communication at the UPF (awarded by EPSON foundation). Her research is within the Music Information Retrieval (MIR) field. She tries to understand and enhance music listening experiences by automatically extracting descriptors from music signals. She has designed algorithms able to describe music signals in terms of melody, tonality, and, by incorporating machine learning techniques, she has been able to model high-level concepts such as similarity, style or emotion. Emilia Gómez has co-authored more than a 100 publications in peer-reviewed scientific journals and conferences. She has contributed to more than 15 research projects, most of them funded by the European Commission and Spanish Government. She is elected member-at-large of the International Society for Music Information Retrieval (ISMIR). At the moment, she contributes to the COFLA project on computational analysis of flamenco music and she is the principal investigator for the European research project PHENICX, trying to innovate the way we experience classical music concerts.

Markus Schedl is an Associate Professor at the Johannes Kepler University Linz / Department of Computational Perception. He graduated in Computer Science from the Vienna University of Technology and earned his Ph.D. in Technical Sciences from the Johannes Kepler University Linz. Markus further studied International Business Administration at the Vienna University of Economics and Business Administration as well as at the Handelshogskolan of the University of Gothenburg, which led to a Master's degree. Markus (co-)authored more than 120 refereed conference papers and journal articles (among others, published in ACM Multimedia, SIGIR, ECIR, IEEE Visualization; Journal of Machine Learning Research, ACM Transactions on Information Systems, Springer Information Retrieval, IEEE Multimedia). Furthermore, he is associate editor of the Springer International Journal of

Multimedia Information Retrieval and serves on various program committees and reviewed submissions to several conferences and journals (among others, ACM Multimedia, ECIR, IJCAI, ICASSP, IEEE Visualization; IEEE Transactions of Multimedia, Elsevier Data & Knowledge Engineering, ACM Transactions on Intelligent Systems and Technology, Springer Multimedia Systems). His main research interests include web and social media mining, information retrieval, multimedia, and music information research. Since 2007, Markus has been giving several lectures, among others, "Music Information Retrieval", "Exploratory Data Analysis", "Multimedia Search and Retrieval", "Learning from User-generated Data", "Multimedia Data Mining", and "Intelligent Systems". He further spent several guest lecturing stays at the Universitat Pompeu Fabra, Barcelona, Spain, the Utrecht University, the Netherlands, the Queen Mary, University of London, UK, and the Kungliga Tekniska Hgskolan, Stockholm, Sweden.

Xavier Serra is Associate Professor of the Department of Information and Communication Technologies and Director of the Music Technology Group at the Universitat Pompeu Fabra in Barcelona. After a multidisciplinary academic education he obtained a PhD in Computer Music from Stanford University in 1989 with a dissertation on the spectral processing of musical sounds that is considered a key reference in the field. His research interests cover the analysis, description and synthesis of sound and music signals, with a balance between basic and applied research and approaches from both scientific/technological and humanistic/artistic disciplines. Dr. Serra is very active in promoting initiatives in the field of Sound and Music Computing at the local and international levels, being involved in the editorial board of a number of journals and conferences and giving lectures on current and future challenges of the field. He has recently been awarded an Advanced Grant of the European Research Council to carry out the project CompMusic aimed at promoting multicultural approaches in music computing research.

Xiao Hu is an Assistant Professor in the Division of Information and Technology Studies in the Faculty of Ed- ucation of the University of Hong Kong. She received her Ph.D degree in Library and Information Science from the University of Illinois, with an award winning dissertation on multimodal music mood classification. Dr. Hu's research interests include music mood recognition, MIR evaluation, user-centered MIR studies and cross-cultural MIR. Dr. Hu has won the Best Student Paper award in the ACM Joint Conference on Digital Libraries (2010) and Best Student Paper award in the iConference (2010). Dr. Hu has been a visiting scholar at the National Institute of Informatics, Japan. She was a tutorial speaker on music affect recognition (2012) and a Conference Co-chair (2014) in the International Society for Music Information Retrieval Conference.