

# Tutorial 6

## Trustworthy MIR: Creating MIR applications with values

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### Abstract

The MIR community shows an increasing interest in understanding how current technologies affect the everyday experience of people all over the world, e.g., how we listen to music, compose songs, or learn to play an instrument. As it was introduced in the [FAT-MIR tutorial](#) held at ISMIR 2019, a great discussion has aroused around the ethical, social, economic, legal, and cultural implications that the use of MIR systems have in our life.

In this tutorial, we aim at building upon and expanding the aforementioned debate, discussing the more recent results obtained by the MIR community and beyond. The goal of the tutorial is to show how values, such as fairness and diversity, can be embedded in the life cycle of MIR systems to make them trustworthy: from algorithmic design to evaluation practices and regulatory proposals. To achieve that, we will discuss examples of, among the others, popularity bias, gender bias, algorithmic bias, music styles underrepresentation, and diversity-related phenomena (e.g. filter bubbles).

This tutorial is suitable for researchers and students in MIR working in any domain, as these issues are relevant for all MIR tasks. The examples will mostly focus on music information retrieval and recommendation, but there are no prerequisites for taking this tutorial. Besides presenting recent research insights, the tutorial will integrate two hands-on sessions, where we will involve the participants in reflecting on the design of evaluation methods that take into account values for which MIR systems should be accountable.

### Biography of the Presenter

[Christine Bauer](#) is an assistant professor at the Department of Information and Computing Sciences at Utrecht University, The Netherlands. Her research activities center on interactive intelligent systems. Recently, she focuses on context-aware (music) recommender systems. A core interest in her research activities are fairness in algorithmic decision-making and multi-method evaluations. Her research and teaching activities are driven by her interdisciplinary background. She holds a Doctoral degree in Social and Economic Sciences, a MSc in Business Informatics, and a Diploma degree in International Business Administration. In addition, she pursued studies in jazz saxophone. Christine holds several best paper awards and awards for her reviewing activities. Furthermore, she received the Elise Richter grant by the Austrian Science Fund. Before joining Utrecht University, she was a researcher at Johannes Kepler University Linz, WU Wien, and EC3 (Austria), and University of Cologne (Germany). In 2013 and 2015, she was a Visiting Fellow at Carnegie Mellon University (PA, USA). Christine has co-organized the workshop PERSPECTIVES 2021 at RecSys 2021 and IUadaptMe 2019 at UMAP 2019. At UMAP 2021, she gave a tutorial on Multi-Method Evaluation of Adaptive Systems. Furthermore, she was a co-chair for the Doctoral Symposium at RecSys 2021.

[Andrés Ferraro](#) (BSc/MSc in Software Engineering) is a Postdoctoral Fellow at McGill University and Mila (Quebec AI Institute), Canada. He completed his PhD at the Department of Information and Communication Technologies and Engineering of the Universitat Pompeu Fabra, Spain. His thesis uncovers multiple dimensions in which music recommender systems affect the artists and proposes alternatives to mitigate such problems. He is currently part of an interdisciplinary project, rethinking music recommender systems by considering new and alternative conceptions from the social sciences and humanities, informed by non-profit systems and critical debates over bias and discrimination. He is co-organizer of LatAm Bish Bash, a series of meetings and networking events that connect engineers, researchers, and students working on music and audio signal processing.

[Emilia Gómez](#) (BSc/MSc in Electrical Engineering, PhD in Computer Science) is Principal Investigator on Human and Machine Intelligence (HUMAINT) team at the Joint Research Center (European Commission). She is also a Guest Professor at the Music Technology Group, Universitat Pompeu Fabra, Barcelona. Her research is grounded on the Music

Information Retrieval field, where she has developed data-driven technologies to support music listening experiences. Starting from music, she studies the impact of artificial intelligence (AI) on human decision making, cognitive and socio-emotional development. Her research interests include fairness and transparency in AI, the impact of AI on jobs, and how it affects children development.

**[Lorenzo Porcaro](#)** (MSc Sound and Music Computing and Intelligent Interactive Systems) is a PhD candidate at the Music Technology Group, Universitat Pompeu Fabra (UPF), Spain. His research is at the intersection between Music Information Retrieval and Social Computing, and he is currently working on the assessment of the impact of music recommender systems on cultural diversity. He has collaborated in several initiatives focused on the analysis of ethical dimensions of algorithmic systems (Mechanism Design for Social Good (MD4SG); divinAI project, HUMAINT / UPF). He has also been part of national and international research projects aiming at making music more accessible through the use of technology (Musical AI, TROMPA).