Alessandro Benedetto Melchiorre

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Personal Profile

I am a PhD student at the Institute of Computational Perception at the Johannes Kepler University in Linz, Austria. I am enthusiastic about developing interpretable models and explainability methods for recommender systems, especially in the music domain. I am also interested in bias and fairness of recommender system algorithms and investigating the relationships between users' characteristics and music preference and consumption.

Education

2019 – Present
Johannes Kepler Universität Linz – Linz, Austria
Doctoral Student
Institute of Computational Perception and Linz Institue of Technology PhD School
Supervisor: Prof. Mag. Dr. Markus Schedl

2018 – 2019 (6 months)
Technische Universität Berlin – Berlin, Germany
Awarded with a scholarship to write the master's thesis abroad
Database Systems and Information Management Group
Supervisors: Prof. Dr. Volker Markl and Dr. Kaustubh Beedkar

2016 – 2019
Sapienza - Università di Roma – Rome, Italy
Master of Science Degree
Engineering in Computer Science with focus on Machine Learning and Big Data
Grade: 110/110 Cum Laude – Weighted Mark Average: 29.7/30

2013 – 2016
Università degli Studi di Napoli Federico II – Naples, Italy
Bachelor of Science Degree
Engineering in Computer Science
Grade: 110/110 Cum Laude – Weighted Mark Average: 29.6/30

Publications

2022 **ProtoMF: Prototype-based Matrix Factorization for Effective and Explainable Recommendations**
Alessandro B. Melchiorre, Christian Ganhör Navid Rekabsaz, Markus Schedl
Paper at ACM Conference on Recommender Systems (RecSys)

2022 **EmoMTB: Emotion-aware Music Tower Blocks**
Alessandro B. Melchiorre, David Penz, Christian Ganhör, Oleg Lesota, Vasco Fragoso, Florian Friztl, Emilia Parada-Cabaleiro, Franz Schubert, Markus Schedl
Demo Paper at International Conference on Multimedia Retrieval (ICMR)

2022 **Explainability in Music Recommender Systems**
Darius Afchar*, Alessandro B. Melchiorre*, Markus Schedl, Romain Hennequin, Elena V. Epure, Manuel Moussallam
Article in AI Magazine 2022

2021 **Investigating Gender Fairness of Recommendation Algorithms in the Music Domain**
Alessandro B. Melchiorre, Navid Rekabsaz, Emilia Parada-Cabaleiro, Stefan Brandl, Oleg Lesota, Markus Schedl
Journal in Information Processing & Management - Special Issue on Algorithmic Bias and Fairness in Search and Recommendation

2021 **LEMONS: Listenable Explanations for Music recOmmeNder Systems**
Alessandro B. Melchiorre*, Verena Praher*, Markus Schedl, Gerhard Widmer
Demo Paper at European Conference on Information Retrieval (ECIR)

2020 **Personality Bias of Music Recommendation Algorithms**
Alessandro B. Melchiorre, Eva Zangerle, Markus Schedl
Short Paper at ACM Conference on Recommender Systems (RecSys)

2020 **Personality Correlates of Music Audio Preferences for Modelling Music Listeners**
Alessandro B. Melchiorre, Markus Schedl
Short Paper at ACM Conference on User Modeling, Adaptation and Personalization (UMAP)

Projects

March 2022 – September 2022

Black Holes of Popularity at ARS Electronica Festival 2022

PI of the Project

The universe of music is dominated by a small number of popular tracks. Being broadcasted, recommended, shared, and talked about, they overshadow the many pieces of lesser known, niche, and new music, effectively devouring them. Visitors of the "Black Holes of Popularity" exhibit will travel to the very heart of the music universe and get a chance to help obscure compositions of their choice come to light and withstand black holes of popularity.

Black Holes of Popularity was presented at the Linz ARS Electronica Festival 2022 and funded by the Linz Institute of Technology and the State of Upper Austria (Funding 62.000 EUR).

February 2021 – September 2021

Emotion-aware Music Tower Blocks at ARS Electronica Festival 2021

Co-PI and Tech Leader of the Project

Emotion-aware Music Tower Blocks (EmoMTB) is an audiovisual interface to explore large music collections. It adopts the metaphor of a city, where similar songs are grouped into buildings. Nearby buildings form neighborhoods of similar genres. Users navigate through the city, exploring different musical styles either within their comfort zone or outside it. Tailoring the results of a recommender engine to match the affective state of the user, EmoMTB provides a new way to discover music.

EmoMTB was presented at the Linz ARS Electronica Festival 2021 and funded by the Linz Institute of Technology (Funding 54.000 EUR).

Reviewer experience

2022

ACM Multimedia (ACMMM)

Main Conference

2021

Web Conference (WWW)

User Modeling and Personalization

2020 - 2021

ACM Conference on User Modeling, Adaptation and Personalization (UMAP)

Main Track (2020), Demo and Late-Breaking Results (2021)

Technical skills

Programming languages

Proficient in: Python, SQL, Java

Familiar with: C/C++, JavaScript

Software

Pytorch, Numpy, Scipy, Pandas, Scikit-learn, Tensorflow (previous experience), Keras (previous experience), Jupyter, Ray Tune, Conda, Git

Languages

English (Fluent), Italian (Native), German (Beginner)

Other interests and Hobbies

Mid-/Long-distance Running (8-28 km), Managing my own NAS