

# MIP-Frontiers: New Frontiers in Music Information Processing<sup>1</sup>

**Seminar, Mid-term Check Meeting and Summer School**

Barcelona, 20–24 May 2019

`https://mip-frontiers.eu`

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- PhD Training Network for 15 Early Stage Researchers (ESRs)
- 4 Universities
- 3 Industry Beneficiaries
- 9 Partner Institutions
- Funding  $\approx$  €4M<sup>1</sup>; April 2018 – March 2022
- Emphasis on **training**, not just research
  - Cross-sectoral training for all students
  - Regular network-wide events
  - All partners contribute

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# The MIP-Frontiers Proposal

... standard methods tend to be neither robust ... nor scalable ... To train a new generation of researchers who are aware of, and can tackle, these challenges, we bring together leading MIR groups and a wide range of industrial and cultural stakeholders to create a multidisciplinary, transnational and cross-sectoral European Training Network ... to contribute to Europe's leading role ... and accelerate the impact of innovation on European products and industry. The researchers will develop breadth ... in transferable skills, whilst gaining deep knowledge and skills in their own area of speciality. They will learn to perform collaborative research, and to think entrepreneurially and exploit their research in new ways that benefit European industry and society. The proposed work is structured along three research frontiers ... guided by ... industrial and cultural stakeholders in the consortium, which range from consumer electronics companies and big players in media entertainment to innovative SMEs, cultural institutions, and even a famous opera house ...

# Scientific Objectives

Aim: address issues of scalability, robustness, and generalisability of current music information processing methods by development and integration of new data-driven, knowledge-driven, and user-driven approaches

- Investigate new theory and algorithms for audio signal processing and machine learning of music information
- Research the use of high-level musical knowledge and contextual information for solving hard music processing & recognition tasks
- Explore the use of direct & indirect user input about user context, behaviour and perception for music information processing
- Tackle real-world problems, esp. via industry partners
- Share research advances across network
- Disseminate to academic and non-academic audiences, via: publications, data, software, public engagement



# Beneficiaries

- QMUL: Centre for Digital Music, Queen Mary University of London, UK
- UPF: Music Technology Group, Pompeu Fabra University, Barcelona, Spain
- TPT: Signal and Image Processing Department, Telecom Paristech, France
- JKU: Department of Computational Perception, Johannes Kepler University of Linz, Austria
- SONY: Sony Computer Science Laboratory, Paris, France
- DRM: DoReMIR Music Research, Stockholm, Sweden
- ROLI: Roli Ltd, London, UK

- DZ: Deezer, France
- TC: Technicolor R & D, France
- AN: Audionamix, France
- NI: Native Instruments, Germany
- BMAT: BMAT, Spain
- KI: Karajan Institute, Austria
- TIDO: Tido Music, UK
- VSO: Vienna State Opera, Austria
- JAM: Jamendo, Luxemburg

# Individual Research Projects (1)

<b>ID</b>	<b>Student (Supervisor)</b>	<b>Title</b>
QMUL1	Emir Demirel (Simon Dixon)	Representations and models for singing voice transcription
QMUL2	Carlos Lordelo (Emmanouil Benetos)	Instrument modelling to aid polyphonic transcription
QMUL3	Ruchit Agrawal (Simon Dixon)	Leveraging user interaction to learn performance tracking
QMUL4	Alejandro Delgado (Mark Sandler)	Fine grain time resolution audio features for MIR
QMUL5	Vinod Subramanian (Mark Sandler)	Note level audio features for understanding and visualising musical performance
UPF1	Philip Tovstogan (Xavier Serra)	Tag propagation from structured to unstructured music collections
UPF2	Antonio Ramires (Xavier Serra)	Extending audio collections by combining audio descriptions & audio transformations



# Individual Research Projects (2)

<b>ID</b>	<b>Student (Sup.)</b>	<b>Title</b>
UPF3	Furkan Yesiler (Emilia Gómez)	Audio content description in broadcast recordings
TPT1	Karim Ibrahim (Gaël Richard)	Behavioural music data analytics
TPT2	Kilian Schulze-Forster (Roland Badeau)	Voice models for lead vocal extraction and lyrics alignment
TPT3	Giorgia Cantisani (Slim Essid)	Multimodal movie music track remastering
TPT4	Ondřej Cífka (Gaël Richard)	Context-driven music transformation
TPT5	Javier Nistal (Gaël Richard)	Defining, extracting and recreating studio production style from audio recordings
JKU1	Luís Carvalho (Gerhard Widmer)	Large-scale multi-modal music search & retrieval without symbolic representations
JKU2	Charles Brazier (Gerhard Widmer)	Live tracking & synchronisation of complex musical works via multi-modal analysis



# Agenda: Mon 20 May

- 15:00 MIP-Frontiers project overview  
Simon Dixon, Queen Mary University of London
- 15:15 *Application-oriented research ...*  
Estefania Cano, Fraunhofer IDMT, Germany
- 16:00 *MIR research for broadcast monitoring*  
Emilio Molina, BMAT
- 16:30 Coffee break
- 17:00 *(Web) studies involving user data*  
Daniel Wolff, Tido Music
- 17:30 *Why the music business is dead ...*  
Matthias Roeder, Herbert von Karajan Institute
- 18:00 Close



# Agenda: Tue 21 – Fri 24 May

- Tue 21 May, 9:00-17:15 Mid-term Review Meeting
- Tue 21 May, 17:30-18:30 Supervisory Board Meeting
- Wed 22 May, 9:30-18:00 MIP-Frontiers Summer School, Day 1
- Thu 23 May, 9:30-18:00 MIP-Frontiers Summer School, Day 2
- Fri 24 May, 9:30-18:00 MIP-Frontiers Summer School, Day 3