

# MATTEO LIONELLO

**Email:** lionello.matteo@gmail.com; **Linkedin:** linkedin.com/in/matteo-lionello-393756110/

## EDUCATION AND JOB EXPERIENCE

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**Machine Learning research consultancy for audio , UK**

*2021 - present*

**The Bartlett Institute, University Collage London (UCL), London**

*October 2018 - February 2021*

MPhil Student at the Bartlett Institute

Thesis title: "A new methodology for modelling urban soundscapes: a psychometric  
revisitation of the current standard and a Bayesian approach for individual response prediction"

**Universitat Pompeu Fabra, Barcelona**

*September - December 2017*

Intern position at Music Technology Group, MTG - TELMI ERC project

Project title: "A Machine Learning Approach to Violin Vibrato Modelling  
in Audio Performances and a Didactic Application for Mobile Devices"

**Aalborg University, Copenhagen**

*October 2016 - June 2018*

MSc in Sound and Music Computing, SMC

Thesis title: "Deep Learning for Sounds Representation and Generation"

**University of Padova, Padova**

*September 2011 - November 2015*

BSc in Information Engineering

Thesis title: "Interactive Soundscapes: Design of a physical space augmented by  
dynamic sound rendering."

## MACHINE LEARNING: A SELECTION OF PROJECTS

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- Bayesian-NN for individual soundscape assessment predictions
- Parametric t-SNE (ANN) for music recommendation system and browser GUI for online music streaming providers - in collaboration with MoodAgent Company (Copenhagen)
- Variational Autoencoder for sound morphing
- Violin vibrato expressive performance modelling and GUI on android rendering with real time pitch detection
- LSTM modelling for melody structure extraction and generation

## CONFERENCES AND WORKSHOPS

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Digital Music Research Network One-day Workshop 2020 (DMRN+15)

*December 15, 2020 London*

International Conference on Acoustics, Speech, and Signal Processing (ICASSP)

*May 4 to 8, 2020 Barcelona*

International Congress on Acoustics (ICA2019)

*September 9 to 13, 2019 Aachen*

Machine Learning for Acoustics Summer School (UKANSS19)

*August 5 to 9, 2019 Gregynog Hall, Tregynon*

Soundscape Workshop (IOA)

*June 25, 2019 London*

Sound and Music Computing Conference (SMC Conference)

*July 4 to 7, 2018 Limassol*

International Workshop on Machine Learning and Music (MML)

*October 6, 2017 Barcelona*

New Interfaces for Musical Expression (NIME)

*May 15 to 19, 2017 Copenhagen*

Sound and Music Computing Summer School

*August 26 to 30, 2016 Hamburg*

## PRIZES AND AWARDS

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Winner of fully-funded PhD position at University Ca' Foscari in Computer science - not accepted due to  
time incompatibility with the meantime research program at UCL

*2019*

UKAN Acoustics Network Summer School Grant

*2019*

£500,00 Young Scientist Conference Attendance Award

*2019*

Winner of £21,837 studentship (full time) in urban sound environment, EU ERC

*2018*

Awarded grant of DKK 6.963,00 by OTTO MNSTEDS FOND.

*2018*

## TECHNICAL KNOWLEDGE

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**Programming Languages:** Java, Python, Matlab, Unix, basic knowledge of C++ and PHP

**Libraries:** Keras, Tensorflow, Pytorch, Pytorch Lightning

**Protocols:** OpenSoundsControl (OSC) and TCP/IP

**Databases:** basic knowledge of SQL and MySQL

**Tools:** PureData, Android, HTML, CSS and basic knowledge of PHP

## LANGUAGE SKILLS

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ITALIAN: Native language  
ENGLISH: C1 (7.5 IELTS, October 2018)  
SPANISH: Básico

## SELECTED PUBLICATIONS

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2021:

M. Lionello, F. Aletta, J. Kang, (2021) " *Introducing a Method for Intervals Correction on Multiple Likert Scales: A Case Study on an Urban Soundscape Data Collection Instrument*" Frontiers in Psychology

2020:

M. Lionello, F. Aletta, J. Kang, (2020) " *A systematic review of prediction models for the experience of urban soundscapes*" in Applied Acoustics

A. Mitchell, T. Oberman, F. Aletta, M. Erfanian, M. Kachlicka, M. Lionello, J. Kang, (2020) " *The Soundscape Indices (SSID) Protocol: A Method for Urban Soundscape Surveys Questionnaires with Acoustical and Contextual Information*" in Applied Sciences

M. Lionello, F. Aletta, J. Kang. (2019) " *On the dimension and scaling analysis of soundscape assessment tools: a case study about the Method A of ISO/TS 12913-2:2018*" Invited paper of 23rd international congress on acoustics.

2019:

F. Aletta, T. Oberman, J. Kang, M. Erfanian, M. Kachlicka, M. Lionello, A. Mitchell, (2019) " *Associations between soundscape experience and self-reported wellbeing in open public urban spaces: a field study*, The LANCET,

M. Lionello, H. Purwins (2019) " *End-To-End Dilated Variational Autoencoder with Bottleneck Discriminative Loss for Sound Morphing - A Preliminary Study*" DOI: 10.13140/RG.2.2.21572.58240/1.

2018:

M. Lionello, L. Pietrogrande, H. Purwins, M. Abou-Zleikha (2018) " *Exploration of Musical Space with Parametric t-SNE in a Browser Interface*" Proceedings to the 15th Sound and Music Computing Conference, Limassol, Cyprus.

M. Lionello, R. Ramirez, (2018) " *A Machine Learning Approach to Violin Vibrato Modelling in Audio Performances and a Didactic Application for Mobile Devices*" Proceedings to the 15th Sound and Music Computing Conference, Limassol, Cyprus.

M. Lionello, H. Purwins " *Deep Learning for Sounds Representation and Generation*" Master thesis, 2018. Aalborg University, Copenhagen [https://projekter.aau.dk/projekter/files/281073844/thesis\\_matteolionello.pdf](https://projekter.aau.dk/projekter/files/281073844/thesis_matteolionello.pdf).

2017:

M. Lionello, M. Mandanici, S. Canazza, E. Micheloni, (2017) " *Interactive Soundscapes: Developing a Physical Space Augmented through Dynamic Sound Rendering and Granular Synthesis*" Proceedings of the 14th Sound and Music Computing Conference, Espoo, Finland.

Complete list of publications available on my personal Research Gate page: [researchgate.net/profile/Matteo\\_Lionello](https://researchgate.net/profile/Matteo_Lionello)

**Activities, Interests, Hobby and Sport:** Amateur chess player and photographer. Dolomites lover. Studies of classical Pianoforte, classical and jazz Guitar and Saxophone at *Il Suono Improvviso* and *Miles Davis* music schools besides a Laboratory of impromptu techniques; Participation to local music festival; Attended various sports: Football, Athletic, Karate, Handball, Basketball and especially Volleyball from 2004 to 2010 at CUS in Venice and joining local selections; Attended the Astronomy course *Il cielo come laboratorio* at G.B Benedetti High School following a stage at the Astronomical Observatory in Asiago.