MATTEO LIONELLO

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EDUCATION AND JOB EXPERIENCE

The Neuro - Montreal Neurological Institute (MNI), McGill, Canada   *April 2025 - present*
Visiting PhD at The Auditory Cognitive Neuroscience Laboratory, Dr. Robert Zatorre
    Part of a project in: "*EEG and TMS for Music Perception and Cognition*"

School for Advanced Studies Lucca, Italy   *October 2022 - present*
PhD student in Cognitive, Computational and Social Neuroscience
    Research Unit: Social and Affective Neuroscience (SANe)

Machine Learning & Deep Learning Research Consultant for Audio, UK   *2021 - 2022*

The Bartlett Institute, University College 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*
Visiting student at Music Technology Group, MTG - TELMI ERC project with Prof. Rafael Ramirez
    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 Sound 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

- BOSS: Brain Orchestra Synchronisation Study. A framework for studying the impact of acoustic information load on sycnhronizatsion activity between brain regions
- Real-time audio denoising
- Bayesian-NN for soundscape assessment predictions and a perceptual index development & evaluation
- 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 transformation
- Violin vibrato expressive performance modelling & GUI on android for real-time pitch detection & rendering
Please, visit the following link for a more exhaustive list of projects: `https://matteolionello.com/`

REVIEWER ACTIVITY FOR JOURNALS

The Journal of the Acoustical Society of America (JASA), ASA; European Physical Journal (EPJ), Springer Science+Business Media; Neurocomputing, Elsevier; Quality and Quantity, Springer Science+Business Media; Building Simulation Journal, Springer-Nature;

PATENTS INVENTORSHIP

US 2024/0290337 A1; GB 2612621 A; WO 2023/079456; CN 2022/80087786.8; EP-4427221 A1

CO-ADVISOR ACTIVITY

Caterina Di Nuzzo: "*Il rapporto fra sinergie motorie facciali ed esperienza emotiva soggettiva*"   UniPI, 2023

Salvatore Laurito: "*Progettazione e sviluppo di un metodo per la raccolta dati volta alla valutazione
       dell'esperienza di ascolto musicale durante concerti dal vivo*"   UniPI, expected 2025

A SELECTION OF CONFERENCES AND WORKSHOPS (*CONTRIBUTION/ORGANIZATION)

BrainHack Lucca 2024 (BHL24)*	*December 2 to 5, 2024 Lucca*
Audio Mostly (AUDIOMOSTLY 2024)	*September 18 to 20, 2024 Milan*
Organisation for Human Brain Mapping (OHBM 2024)*	*June 23 to 27, 2024 Seoul*
BrainHack Lucca 2023 (BHL23)*	*December 4 to 7, 2023 Lucca*
Societa' Italiana di Psicofisiologia e Neuroscienze Cognitive (SIPF 2023)*	*November 9 to 11, 2023 Siena*
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*
New Interfaces for Musical Expression (NIME)	*May 15 to 19, 2017 Copenhagen*
Sound and Music Computing Summer School	*August 26 to 30, 2016 Hamburg*

GRANTS AND AWARDS

IMT Lucca - Fully funded PhD scholarship in Cognitive, Computational and Social Neuroscience	*2022*
UKAN - Acoustics Network Summer School Grant	*2019*
UCL - Fully funded MPhil scholarship in soundscapes £21,837/year	*2017*
ICA - Young Scientist Award	*2019*
OTTO MNSTEDS FOND. - Awarded grant of DKK 6.963,00	*2018*

TECHNICAL KNOWLEDGE

Programming Languages:	Java, Python, Matlab, Bash - basic knowledge of C++, PhP and Javascript
Libraries:	Keras, Tensorflow, Pytorch, Pytorch Lightning, asteroid, scikit-learn, OpenAi
Protocols:	Basic knowledge of OpenSoundsControl (OSC), TCP/IP, SQL
Tools:	AFNI, Git & Github, PyCharm, GoogleCloud, PureData, Android SDK, HTML, CSS, LaTex

SELECTED PUBLICATIONS

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

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.

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.

A complete list of publications is available at my personal Research Gate page: researchgate.net/profile/Matteo_Lionello