

PERSONAL INFORMATION

Fulvio Missoni



Sex | Date of birth 13/10/1995 | Nationality

PhD Student in Bioengineering at University of Genoa

EDUCATION AND TRAINING

January 2024 – August 2024

Visiting Researcher in AXD Group – Imperial University - London

Visiting researcher in Audio Experience Design (AXD) Group at Imperial College. I worked on projects aimed investigating the auditory perception in realistic environments. The projects were focused on the study of how the acoustic characteristics of the environment can influence our listening behaviour and spatial perception.

- VR technology
- HRTF measurement
- Listening Tests

November 2021 – in progress

PhD Student in Bioengineering

Università Degli Studi Di Genova

- Studying adaptation processes in human brain after alteration of auditory space perception
- Use of spatial audio technologies, Virtual reality, 3D scanner etc.
- Programming in Python, C# languages

March 2022

Participation of The Applied Machine Learning Days (AMLD) Workshop at EPFL, Lausanne, Switzerland

Followed workshops:

- “Designing Effective Visualizations to Communicate Data Stories”
- “Who Will Stay and Who Will Go? Predicting Customer Churn with Survival Analysis in Python”
- “Unpacking the “Black Box”: How to Interpret your Machine Learning Model?”
- “Unpacking the “Black Box”: How to Interpret your Machine Learning Model?”

April 2021 – October 2021

Scholarship Researcher

Università Degli Studi Di Genova

- Use of neuromorphic algorithms to model visual perceptual learning.
- Title of the project: “Receptive fields models for active visual perception”

March 2018 – March 2021

Master Degree in Bioengineering

Università Degli Studi Di Genova

- Title: “Anthropomorphic visual system: neural models for active 3D perception”
- Curriculum in Neuroengineering and Bio-ICT.
- Use of neuromorphic algorithms in Computer Vision (E.g. Shape reconstruction by means of stereoscopic visual system).
- Basic use of Machine Learning algorithms

September 2014 - February 2018

Bachelor Degree in Biomedical Engineering

Università Degli Studi Di Genova

- Software developing in C++/Matlab languages

- Linear Systems Analysis and use of these tools for the realization of simple technologies used in the medical field

ACHIEVEMENTS

- November 2021 – in progress **Poster presentation The 21st International Multisensory Research Forum (IMRF) (June 27-30, 2023) Brussels, Belgium.**
Title: "Multisensory integration in depth: a virtual reality feasibility study"
 Authors: F. Missoni, A.Canessa.
- Poster presentation at VIII Congress of the National Group of Bioengineering (GNB) (June 21-23, 2023) Padua, Italy.**
Title: "Evaluating spatial hearing in virtual reality environment"
 Authors: F. Missoni, A.Canessa.
- March 2021 – November 2021 **Poster presentation at 32nd Center for Visual Science (CVS) Symposium (May 19-22, 2022) Rochester, NY.**
Title: "Facilitation in pattern motion perception of self-operated stimuli explained by active contrast normalization"
 Authors: F. Missoni, F. Peveri, A. Canessa, G. Sedda, V. Sanguineti, D. J.Ostry, S. P. Sabatini.

PERSONAL SKILLS

Skills Programming languages (C#, Python, Matlab), psychophysical methods, simple artificial intelligence tools

Mother tongue(s) Italian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2

MOTIVATION

I have started working on perception in my master thesis, from a computational point of view. Specifically, I have developed bio-inspired computational models of depth and motion perception in an active vision setting. These models have been used to explain adaptive perceptual integration processes at neural level. On this last topic I have presented a poster at CVS Symposia in Rochester (NY). Subsequently, in my PhD project, I have directed my studies to behavioural human multisensory perception of space. More in detail, I investigated the interaction processes across senses that occur in 3D space perception, with particular focus on realism of tested conditions. To this aim, I have started developing a virtual reality system that integrates visual and auditory modality and the preliminary results on this topic have been presented in two different posters.

First, relying on virtual reality and binaural audio technologies, I extended the classical experimental paradigms used for the evaluation of spatial hearing to take in account active aspects of perception (e.g., head movements) in ecological conditions. The obtained results were presented at National Group of Bioengineering conference in Padua.

Then, I applied the same approach to replicate a previous work's theory on spatiotemporal multisensory integration rule. The results, presented at the International Multisensory Research Forum in Brussels, analyse perceptual changes in temporal synchrony of audiovisual stimuli in different locations of frontal space. Specifically, I took into account the measured intrinsic temporal delays of the system and the experience personalization in the virtual scenario. Finally, I have recently concluded my visiting experience in AXD Group at Imperial College. Under the supervision of Prof Lorenzo Picinali I focused my studies on the personalisation of the auditory perception and the influence of alteration in visual search task in virtual reality. The use of the system in their lab has allowed to me to work with the state of the art systems used to personalise the virtual auditory perception.

To conclude, considering my previous experience, I am really interested to work on proposed project and I am convinced that I am well suited for it.