Matteo Vissani

Biomedical Engineer

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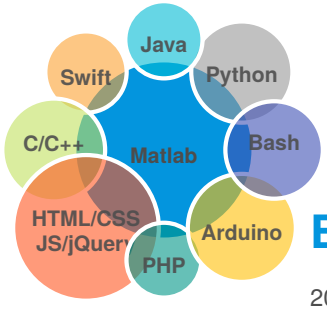
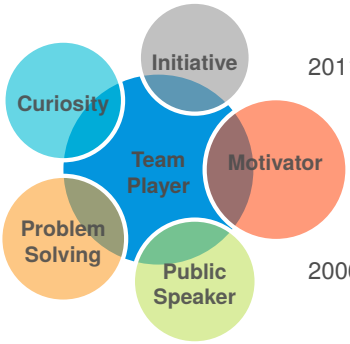
Programming



Personal Skills



Experience

10/17 - 04/21 **PhD student in Biorobotics** Scuola Superiore Sant'Anna, Pisa (IT)
Breaking the current state of the art of neuromodulatory techniques with a particular focus on Deep Brain Stimulation:
- Signal processing (EMG, LFP, EEG, IMU) using Matlab, R and Python
- Image processing (f-MRI, SPECT, d-MRI) using SPM, FSL, TrackVis
- Embedded programming using Arduino for experiments (leds, buttons, TTL, serial ports, etc.)

02/17- 09/17 **Research Assistant & Neural Engineer** CHUV, Lausanne (CH)
Research experience @TheMySpaceLab of Dr. Andrea Serino:
- Built an iOS app to test multisensory integration deficits in patients
- Signal processing of behavioral data using Matlab, R and Python
- Realization of a 3D platform for moving sounds generation for psychosocial experiments

11/16 - 03/17 **Research Assistant & Neural Engineer** CRR SuvaCARE, Sion (CH)
Research experience @BlankeLab of Dr. Michela Bassolino:
- Signal processing of TMS and IMU data using Matlab, R and Python
- Built an user-friendly GUI interface to use Vicon equipment for psychologists

05/16 - 11/16 **Master's Degree Internship (Erasmus +)** Campus Biotech, Geneve (CH)
Joint Research experience @BlankeLab and Unibo with Prof. Elisa Magosso and Dr. Andrea Serino:
- Computational model of neurophysiological mechanisms using Matlab and Python
- Built of home-made Virtual Reality experiments using Oculus Rift and custom python/C# scripts

Education

2014 - 2017 **MSc in Biomedical Engineering** University of Bologna, Bologna (IT)
Extensive courses in Computational Modelling, Machine Learning, Embedded Programming and Rehabilitation Technologies.
Graduated with 110/110 cum laude and a score average of 29.81/30.

2011 - 2014 **BSc in Biomedical Engineering** Marche Polytechnic University, Ancona (IT)
Extensive courses in Math, Geometry, Digital and Analogic Electronic, Analytic Mechanic and Bioengineering.
Graduated with 110/110 cum laude and a score average of 29.73/30.

2006 - 2011 **Scientific Diploma** ITAS Matteo Ricci, Macerata (IT)
Curriculum: biology and chemistry. Graduated with 100 cum laude and a score average of 9.2/10.

OS Preference

GNU/Linux ★★★★★
MacOS ★★★★★
Windows ★★★★☆

Languages

Italian ★★★★★
English ★★★★☆
French ★★☆☆☆
German ★☆☆☆☆

Interests


Astronomy

AI

Music

Reading

Martial Arts

Publications

M. Vissani*, C. Palmisano*, J. Volkmann, G. Pezzoli, S Micera, A. Mazzoni and I.U. Isaias. **Impaired reach-to-grasp kinematics in parkinsonian patients relates to dopamine-dependent, subthalamic beta bursts.** *(in press in NPJ Parkinson's Disease)*

F. Micheli*, M.Vissani*, G. Pecchioli, F. Terenzi , S. Ramat , A. Mazzoni. **Impulsivity Markers in Parkinsonian Subthalamic Single-Unit Activity**. *Mov Disord. 2021 Jan 16. doi: 10.1002/mds.28497.*

M.Vissani, I. Isaias, A. Mazzoni. **Deep Brain Stimulation: a review of the open neural engineering challenges** *J. Neural Eng., https://doi.org/10.1088/1741-2552/abb581*

M.Vissani, R. Cordella, S. Micera, R. Eleopra, L. Romito, A. Mazzoni. **Spatio-temporal structure of single neuron subthalamic activity identifies DBS target for anesthetized Tourette syndrome patients** *J. Neural Eng. 16 066011*

M.Vissani, R. Cordella, S. Micera, R. Eleopra, L. Romito, A. Mazzoni. **Firing pattern of single neurons in the subthalamic nucleus of Tourette Syndrome patients identifies optimal deep brain stimulation target site: 1389** *Movement Disorders, 2019*

C. Palmisano, G. Brandt, M.Vissani, N.G. Pozzi, ..., I.U. Isaias. **Gait Initiation in Parkinson's Disease: Impact of Dopamine Depletion and Initial Stance Condition** *Front Bioeng Biotechnol. 2020;8:137. Published 2020 Mar 6*

M. Franza, G. Sorrentino, M.Vissani, A. Serino, O. Blanke, M. Bassolino. **Hand perceptions induced by single pulse transcranial magnetic stimulation over the primary motor cortex** *Brain Stimulation, May–June 2019*

J. Miehlbradt, C. Pierella, ..., M.Vissani, A. Mazzoni, ..., S.Micera. **Evolution of Cortical Asymmetry with Post-stroke Rehabilitation: A Pilot Study** *International Conference of Neurorehabilitation, Pisa 2018*

M.Vissani, A. Serino, E. Magosso. **A Neural Network Model of Peripersonal Space Representation Around Different Body Parts** *EMBEC & NBC 2017*

Patents

Inventors: A. Mazzoni, M. Vissani and S. Micera. **"A system for monitoring and treating motor disorders with microrecordings and targeted electrical stimulations."** *Rif: 102020000026831 - Filed Nov 10th 2020.*

Honors & Awards

08/2020	**Intesa San Paolo scholarship**	Bio-Medico University of Rome
	A fully-funded scholarship to partecipate in a competitive programme in AI, IoT and technology organized by Campus Bio-Medico University of Rome.	
07/2019	**Best 3-min Speech Award**	Scuola Superiore Sant'Anna
	During my 2-year PhD evaluation @Volterra SIAF, I performed the best 3-min speech about my project.	
09/2017	**Full-paid PhD Scholarship**	Scuola Superiore Sant'Anna
	A full-paid PhD scholarship. 1 out 100 participants.	
03/2017	**Erasmus + Scholarship**	University of Bologna
	A merit-based scholarship to fulfill my master thesis at Campus Biotech in Geneve (CH)	
10/2016	**Merit-based award**	University of Bologna
	Award of €1500 given by University of Bologna. Top 30 students.	

Certifications & Summer Schools

08/2020 **IoT & AI e-Bootcamp** Bio-Medico University of Rome
An intensive 3-weeks programme with industries about artificial intelligence and IoT, culminating in a final hackathon about a real case-study provided by IBM.

07/2020 **Neuromatch Academy** NMA Team
A massive online summer school about computational methods in neuroscience.

06/2020 **Coach Industry 4.0** ARTES 4.0
A doctorate level course about industry 4.0 and entrepreneurship organized by ARTES 4.0 and Scuola Superiore Sant'Anna.

08/2019 **7th Baltic-Nordic School on Neuroinformatics** FIAS Frankfurt am Main
This course covered modeling at different levels spatio-temporal scales, from single neurons to microcircuits and networks, in healthy and diseased brains using NEURON and NEST.

07/2018 **7th International Summer School of Neuroengineering "Massimo Grattarola"** University of Genova
This summer school aimed to introduce computational and technological methods to researchers of different backgrounds (life sciences, physics, engineering) to interact with the brain.

10/2017 **Computational Neuroscience** Coursera. E-learning
Course of Computational Neuroscience

02/2016 **Safety Courses for students** University of Bologna
Safety Courses: General, Specific Part I and Part II

Invited Talks & Volunteering in Conferences

09/2020 **Guest speaker Lab Meeting** Noninvasive Neuromodulation Unit, National Institute of Mental Health
Title: *Computational methods for model-informed neuromodulatory approaches*

11/2019 **DBS Meeting** University Hospital Würzburg
Title: *An information-based approach to find robust biomarkers in local field potentials*

03/2019 **BioSNS PhD Day, Pisa** Scuola Normale Superiore
Title: *Unveiling subthalamic nucleus functional structure to improve deep brain stimulation therapies in movement disorders*

10/2018 **International Conference on Neurorehabilitation, Pisa** Scuola Superiore Sant'Anna
Volunteering: logistic support and technical aiding

Students tutoring

2019-2020 **Teaching Assistant** Scuola Superiore Sant'Anna
I performed two practical lessons in Information Theory and Neural Modelling Course of PhD programme in Biorobotics.

2018-Now **Projects and Thesis tutoring** Scuola Superiore Sant'Anna
I co-supervised 5 internship and 3 Master Thesis

Scientific Review

Transactions on Neural Systems & Rehabilitation Engineering (IF: 3.5).

Pisa, 1 August 2020

Matteo Vissani