europass



Fabrizio Leo

Nationality: Italian **Gender:** Male **Email address:** fabrizio.leo@gmail.com
LinkedIn: https://www.linkedin.com/in/fabrizioleo1/
Website: https://github.com/leofabrizio
Website: https://www.fabrizioleo.info/

WORK EXPERIENCE

University of Pisa - Department of Translational Research and New Technologies in Medicine and.. – Pisa, Italy

Research Fellowship

[01/11/2024 – Current]

- signal analysis (EMG, EEG)
- statistical analyses
- management of documentation for clinical studies for Ethics Committees approval

Azienda Ospedaliero Universitaria Pisana – Pisa, Italy

Health Fellowship

[27/03/2024 – 01/09/2024]

- analysis and visualization of biomedical data (e.g.: EMG, clinical scales)
- scientific papers and reports writing

Wearable Robotics Srl – Pisa, Italy

Internship

[04/05/2023 – 15/07/2023]

analysis of kinematic and clinical data of 24 stroke patients who did a rehabilitation training using the exoscheletron ALEx designed for the rehabilitation of the upper limbs.

Istituto Italiano di Tecnologia – Genoa, Italy

Visiting scientist

[01/05/2020 – 30/06/2022]

design, implementation and execution of studies using an haptic device (iCube) to measure tactile and spatial skills in healthy and visually impaired persons - statistical analyses - scientific papers writing

Istituto Italiano di Tecnologia – Genoa, Italy

Postdoc

[01/04/2014 – 31/03/2020]

design, implementation and execution of studies using a pin-array matrix (BlindPAD) designed to show graphical information to visually impaired persons - statistical analyses - scientific papers writing

Otto von Guericke Universität Magdeburg – Magdeburg, Germany

Postdoc

[01/09/2012 – 15/03/2014]

design, implementation and execution of psychophysical and neuroimaging (fMRI) studies to investigate multisensory perception in healthy persons - statistical analyses - scientific papers writing

Max Planck Institute for Biological Cybernetics – Tubinga, Germany

Postdoc

[14/06/2010 – 31/08/2012]

design, implementation and execution of psychophysical and neuroimaging (fMRI) studies to investigate multisensory perception in healthy persons - statistical analyses - scientific papers writing

University College London – London, United Kingdom

Honorary Research Associate

[01/04/2009 – 31/05/2010]

design, implementation and execution of psychophysical studies to investigate perception in healthy persons - statistical analyses - scientific papers writing

Università di Bologna – Centro Studi e Ricerche in Neuroscienze Cognitive – Cesena, Italy

Research grant

[01/02/2006 – 16/10/2009]

associazione ComunicArea – Livorno, Italy

Web writer

[2005 – 2006]

psychological articles of general interest (www.area57.it)

EDUCATION AND TRAINING

Certificate of Higher Technical Specialization as a Design, Development, Testing, and Maintenance Software Technician

Associazione Itinera Formazione ETS [12/2022 – 07/2023]

Country: Italy | **Field(s) of study:** Information and Communication Technologies: • Software and applications development and analysis | **Final grade:** 95/100

HTML · PHP · JavaScript · Java · C++ · Web App · Web Development · Marketing · SQL

Google Data Analytics

Coursera [10/2022 – 01/2023]

Excel, R, Tableau, Data cleaning, Data analysis, Data visualization

2° level Master in "Machine learning and Big Data for precision medicine and biomedical research"

Università di Padova [01/2022 – 01/09/2022]

Final grade: Excellent | **Thesis:** Classification and prediction of cancer type using somatic mutation profiles and machine learning approaches

IBM Data Science

IBM on Coursera [03/2020 – 06/2020]

Python, SQL, Machine learning, Data preparation, Data cleaning, Data analysis, Data visualization

PhD in General and Clinical Psychology

Università di Bologna [01/2006 – 27/04/2009]

Final grade: Excellent | **Thesis:** The role of the superior colliculus in spatial orienting

Master in "Information technology law"

CSIG (Centro Studi Informatica Giuridica) [04/03/2005 – 27/05/2005]

Copyright on the net, Computer crimes, Open source, Cybersecurity

Course in "Evaluation and development of human resources"

Università di Firenze [2003 – 2004]

personnel selection, aptitude tests, individual and group interview

Degree and General and Experimental Psychology

Università di Firenze [1997 – 2003]

Final grade: 110/110 cum laude

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING B2 **READING** C2 **WRITING** C2

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Operative Systems

Windows / Android

Programming languages

Matlab / R / – C, C++ , JAVASCRIPT, CSS3, HTML5, PYTHON, PHP / Psychtoolbox

Graphical software

GIMP 2 / Adobe (Adobe Photoshop, Adobe Lightroom, Adobe Premiere, Adobe Bridge, Adobe)

Social networks

Whatsapp / Social media/social Networks

Other software

SPM8 / Software Statistica 8.0 per Windows (StatSoft Inc., Tulsa, USA) / Conoscenza di software per la gestione di riferimenti bibliografici (Mendeley)

Office Tools

Libreoffice package / Microsoft Office package: Microsoft Word, Excel, PowerPoint, Access

PUBLICATIONS

[2026]
Lesion side influences the effects of bilateral upper-limb robotic-assisted training on motor recovery in chronic stroke Journal paper

Journal Name: European Journal of Physical and Rehabilitation Medicine | **Publisher**: Edizioni Minerva Medica

[2026]
Botulinum toxinin motor recovery: innovation in neurorehabilitation Abstract

Volume, Issue and Pages: Volume 271S1, 1 March 2026

Toxicon

[2024]
Long-term management of post-stroke spasticity with Botulinum toxin: a retrospective study Journal paper

Toxins

[2022]
Early blindness modulates haptic object recognition Journal paper

Frontiers in Human Neuroscience

[2022]
Combined spatial and frequency encoding for electrotactile feedback of myoelectric signals Journal paper

Experimental Brain Research

[2022]
Mental rotation skill shapes haptic exploration strategies Journal paper

IEEE Transactions on Haptics

[2020]
Non informative vision improves spatial tactile discrimination on the shoulder but does not influence detection sensitivity Journal paper

Experimental Brain Research

[2020]
Temporal Asynchrony but Not Total Energy Nor Duration Improves the Judgment of Numerosity in Electrotactile Stimulation Journal paper

Frontiers in Bioengineering and Biotechnology

[2019]
Enhancing general spatial skills of young visually impaired people with a programmable distance discrimination training: a case control study Journal paper

Journal of NeuroEngineering and Rehabilitation

[2018]
Improving spatial working memory in blind and sighted youngsters using programmable tactile displays Journal paper

SAGE Open Medicine

[2018]
Updated tactile feedback with a pin array matrix helps blind people to reduce self-location errors Journal paper

Micromachines

[2017]
The effect of programmable tactile displays on spatial learning skills in children and adolescents of different visual disability Journal paper

IEEE Transactions on Neural Systems and Rehabilitation Engineering

[2014]
Conditioned sounds enhance visual processing Journal paper

PLOS One

[2011]
Looming sounds enhance orientation sensitivity for visual stimuli on the same side as such sounds Journal paper

Experimental Brain Research

[2010]
Independent mechanisms for ventriloquism and multisensory integration as revealed by theta-burst stimulation Journal paper

European Journal of Neuroscience

[2008]
Temporo-nasal asymmetry in multisensory integration mediated by the superior colliculus Journal paper

Brain Research

[2008]
Cross-modal localization in hemianopia: new insights on multisensory integration Journal paper

Brain

[2008]
Multisensory integration for orienting responses in humans requires the activation of the superior colliculus Journal paper

Experimental Brain Research

[2007]
Multisensory-mediated auditory localization Journal paper

Perception

[2007]
The contribution of prefrontal cortex to global perception Journal paper

Experimental Brain Research

[2020]
Maps as ability amplifiers: using graphical tactile displays to enhance spatial skills in people who are visually impaired Book chapter

In: Haptic Interfaces for Accessibility, Health, and Enhanced Quality of Life. Springer, Cham

[2019]
A refreshable tactile display effectively supports cognitive mapping followed by orientation and mobility tasks. A comparative multi-modal study involving blind and low-vision participants Conference paper

In: 2019 Workshop on Multimedia for Accessible Human computer Interface,October 25,2019,Nice,France

[2019]
Blind persons get improved sense of orientation and mobility in large outdoor spaces by means of a tactile pin-array matrix Conference paper

In: CHI'19 Workshop on Hacking Blind Navigation, May 04, 2019, Glasgow, Scotland

[2018]
Tactile symbol discrimination on a small pin-array display Conference paper

In: 2018 Workshop on Multimedia for Accessible Human Computer Interface,October 22,2018,Seoul,Korea

[2014]
Study of static tactile detection threshold via pneumatically driven polydimethylsiloxane membrane Conference paper

Proc. of Workshop TacTT2014 (held conjunction of ACM ITS2014), Dresden, Germany

NETWORKS AND MEMBERSHIPS

Società Italiana di Neuropsicologia (SINP)

Società Italiana di Riabilitazione Neurologica (SIRN)

CONFERENCES AND SEMINARS

[05/03/2019] Genoa, Italy
Innovation in Rehabilitation Technologies talk "Blind persons get improved sense of orientation and mobility in large outdoor spaces by means of a tactile pin-array matrix"

[19/09/2018 – 21/09/2018] Lausanne, Switzerland
Limitless! Augmentation of Brain Function poster "Towards autonomous rehabilitation: repeated tactile feedback can improve the construction of cognitive maps prior to exploration in visually impaired persons"

[27/03/2017] San Francisco, USA
Cognitive Neuroscience Society Annual Meeting (CNS 2017) poster "Improving visuo-spatial abilities in blind youngsters using programmable tactile displays"

[08/10/2016] Torino, Italy
XXV Congresso Nazionale AIRIPA talk "BlindPAD: proposta di uno strumento per incrementare le abilità visuo-spaziali nei non vedenti"

[06/06/2016] Paris, France
The European Workshop on Imagery and Cognition (EWIC 2016) poster "Recalling graphical traits with programmable tactile displays improves spatial abilities in young visually impaired persons"

[24/10/2015] Genoa, Italy
Festival della Scienza talk "Tecnologia a supporto della disabilità"

[31/08/2015 – 02/09/2015] Arenzano, Italy
RIC – IIT Workshop on Robotic and Interactive Technologies for Neuroscience and Neurorehabilitation poster "On evaluating usability of a touch-based tablet for blind and severely visually impaired children"

[04/07/2013] Magdeburg, Germany
Masterkolloquium Klinische und Kognitive Neurowissenschaft talk "Insights on the role of the superior colliculus in human multisensory integration"

[06/2013] Jerusalem, Israel

International Multisensory Research Forum 2013 (IMRF) poster "Temporal expectancy selectively enhances audiovisual target detection"

[18/11/2011 – 19/11/2011] Bologna, Italy
SINP Annual Meeting talk "Monetary conditioning influences audio-visual integration by increasing sound saliency"

[10/2011] Fukuoka, Japan
International Multisensory Research Forum 2011 poster "Conditioning influences audio-visual integration by increasing sound saliency"

[25/01/2009 – 31/01/2009] Bressanone, Italy
workshop on Cognitive Neuropsychology talk "Independence of visual bias and audio-visual integration"

[16/07/2008 – 19/07/2008] Hamburg, Germany
International Multisensory Research Forum 2008 (IMRF) poster "Temporo-nasal asymmetry in multisensory integration mediated by the superior colliculus"

[09/05/2008 – 10/05/2008] Bologna, Italy
SINP annual meeting annuale talk "Multisensory integration in humans requires the activation of the superior colliculus"

[21/01/2007 – 26/01/2007] Bressanone, Italy
workshop on Cognitive Neuropsychology talk "Cross-modal localization in hemianopia"

[18/10/2006 – 20/10/2006] Toulouse, Italy
2nd meeting of the European Societies of Neuropsychology poster "Multisensory-mediated auditory localization in hemianopic patients"

[18/06/2006 – 21/06/2006] Dublin, Ireland
International Multisensory Research Forum 2006 (IMRF) poster "Multisensory-mediated auditory localization"

[01/09/2003 – 05/09/2003] Paris, France
European Conference on Visual Perception (ECVP) poster "Disambiguation of motion direction by first-order and second-order motion mechanisms"

PROJECTS

[2023]
Physical activity and sleep patterns of Fitbit users This project aimed at identifying active and sedentary Fitbit users based solely on output data of the smartwatch. Then, I compared activity and physiological data (heart rate, calories, etc.) of the two groups and investigated the relationship between physical activity and sleep.

Link: https://github.com/leofabrizio/fitbit_google_data_analytics

[2022]
Classification and prediction of cancer type using somatic mutation profiles and machine learning approaches The project aimed at answering to three different questions, i.e.:
1) Is it possible to predict cancer type based on genes with somatic mutation in a patient?2) Is there a «small» set of genes having a good predictive power, or at least as good as the entire set of genes?3) Does the patient grouping based on similarity of mutated genes reflect the grouping based on cancer type?
This project was done and defended as a requirement for the 2nd level Master in "Machine learning and big data for precision medicine and biomedical research" of the Università degli Studi di Padova, Italy.

Link: https://github.com/leofabrizio/somatic_mutation_ml

[2021]
Clustering Neighborhoods The project, entirely written in Python, attempted to find an optimal location for a new Japanese restaurant in London based on density data. Using a combination of basic statistics and machine learning

(i.e. cluster analysis), I identified and selected neighborhoods with very few restaurants, no japanese restaurants and close to the city center.

Link: https://github.com/leofabrizio/clustering_neighborhoods

TEACHING EXPERIENCE

[10/2021]

Università di Genova – Degree in Biomedical Engineering – Co-supervisor of bachelor degree theses of candidates Andrea Giuseppe Pietro Manera and Lorenzo Benedetti

[2018 – 2021]

Università di Genova – Phd program in Robotics and Bioengineering – Dipartimento di Informatica, Bioingegneria, Robotica, Ingegneria di Sistema DIBRIS – co-supervisor of PhD thesis of Sara Nataletti

[2015 – 2016]

Università di Torino – Psychology Department – Master thesis co-supervisor of Caterina Baccelliere

[07/2008]

Università di Bologna – Corso di Laurea in Scienze del comportamento e delle Relazioni Sociali - Facoltà di Psicologia - Co-supervisor of bachelor thesis of Noemi Mazzoni

[2006 – 2007]

Università di Bologna – Tutor and support of teaching activities in "Rehabilitation techniques of cognitive deficits"

PARTICIPATION IN INTERNATIONAL RESEARCH PROJECTS

[05/2020 – 06/2022]

European Research Council ERC - investigating Human Shared PErception with Robots (wHiSPER) - Grant agreement ID: 804388

[04/2014 – 05/2017]

European Commission FP7-ICT Personal Assistive Device for BLIND and visually impaired people (BLINDPAD) - Grant agreement ID: 611621

AD HOC REFEREE FOR

Ad hoc reviewer for the following peer-reviewed journals:

Experimental Brain Research, Cerebral Cortex, Neuroimage, PLOS One, Frontiers in Integrative Neuroscience, Frontiers in Computational Neuroscience, Multisensory Research, Transactions on Haptics, Health Expectations, Universal Access in the Information Society, SAGE Open, Behavioral Brain Research

ASSOCIATE EDITOR FOR

SAGE Open

COMMUNICATION AND INTERPERSONAL SKILLS

Scientific writing

First author of 10 out of 18 scientific papers published in peer-reviewed journals