

PERSONAL INFORMATION

Gianluca Borghini



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- Scopus: <https://www.scopus.com/authid/detail.uri?authorId=36145850800>

Sex M | *Date of birth* 24/08/1983 | *Nationality* Italian

WORK EXPERIENCE

June 2025 - Present

Associate Professor

University of Rome Sapienza, Rome, Italy (www.uniroma1.it)

Teaching and R&D on physiological signal processing algorithms for real-time users' mental states, training, and teamwork assessment both in controlled and realistic contexts, in particular Aerospace, Aviation, Maritime, Automotive and Surgical rooms.

[Business sector: Neuroscience, Aerospace, Aviation, Defence Transportation, Maritime, Machine Learning, Mental States and Training Assessment, Human Factor, Neuroergonomics, Human Machine Interaction \(HMI\), Brain Computer Interfaces \(BCI\), Teamwork and cooperation evaluation.](#)

June 2022 – May 2025

Assistant Professor (Tenure Track, RTD - B)

University of Rome Sapienza, Rome, Italy (www.uniroma1.it)

Teaching and R&D on physiological signal processing algorithms for real-time users' mental states, training, and teamwork assessment both in controlled and realistic contexts, in particular Aerospace, Aviation, Maritime, Automotive and Surgical rooms

[Business or sector: Neuroscience, Aerospace, Aviation, Transportation, Maritime, Machine Learning, Mental States and Training Assessment, Human Factor, Neuroergonomics, Human Machine Interaction \(HMI\), Brain Computer Interfaces \(BCI\), Teamwork and cooperation evaluation.](#)

September 2015 – Present

Permanent Research Scientist

Brainsigns srl, Rome, Italy (www.brainsigns.com)

▪ Research and development of signal processing algorithms for real-time user's mental states assessment both in controlled and realistic contexts

[Business or sector: Neuroscience, Aerospace, Aviation, Transportation, Maritime, Machine Learning, Mental States and Training Assessment, Human Factor, Neuroergonomics, Human Machine Interaction \(HMI\), Brain Computer Interfaces \(BCI\)](#)

July 2014 – December 2021

Post-Doctoral Fellow

University of Rome Sapienza, Rome, Italy (www.uniroma1.it)

▪ Development of signal processing algorithms, mental states neurophysiological characterization, and combination of different neurophysiological signals for the user's mental states assessment both in controlled and realistic contexts.

[Business or sector: Neuroscience, Aerospace, Aviation, Transportation, Maritime, Machine Learning, Mental States and Training Assessment, Human Factor, Neuroergonomics, Human Machine Interaction \(HMI\), Brain Computer Interfaces \(BCI\)](#)

January 2010 – June 2013

Fixed term contract as Research ScientistIRCCS Fondazione Santa Lucia, Rome, Italy (www.hsantalucia.it/en)

- Mental workload and training assessment of commercial and military pilots through the analysis of their brain (i.e. EEG signal) and autonomic (i.e. ECG, EOG, and GSR) signals during both simulated and real flights.

Business or sector: Neuroscience, Aerospace, Aviation, Transportation, Maritime, Machine Learning, Mental States and Training Assessment, Human Factor, Neuroergonomics, Human Machine Interaction (HMI), Brain Computer Interfaces (BCI)

EDUCATION AND TRAINING

July 2021

National Scientific Abilitation in Physiology

Instruction, University and Research Italian Ministry (Rome, Italy)

- Qualified as Associate Professor in Physiology

May 2019

National Scientific Abilitation in Bioengineering

Instruction, University and Research Italian Ministry (Rome, Italy)

- Qualified as Associate Professor in Bioengineering

May 2016

PhD in Bioengineering

ALMA MATER STUDIORUM University of Bologna (Bologna, Italy)

- The aim of the PhD was to develop a system for the training assessment and workload evaluation by means of neurophysiological signals. The methodology was validated both in controlled (e.g. Lab) and realistic contexts recruiting nonprofessional and professional personnel like Air Traffic Controllers from the École Nationale de l'Aviation Civile (ENAC, Toulouse, France). In particular, the results showed that i) the developed methodology reduced significantly the required number of EEG sensors; ii) no-manual triggering and settings of the parameters of the machine learning-based algorithm; iii) the performance of the algorithm remained stable and reliable up to a month without any recalibration; iv) the proposed methodology could supply quantitative and objective information regarding the user's training level and mental state to support the Instructor for a better management of the training schedule and program.

June 2013 – September 2013

Research collaboration

SINAPSE Lab, National University of Singapore (Singapore)

- I spent 3 months working at the International Institute for Neurotechnology SINAPSE in at the National University of Singapore (NUS) for a collaboration which aimed at developing methodologies for the evaluation of learning processes and cooperation between couple of subjects engaged on the same task, and real-time mental workload assessment. In this regard, I designed the experimental protocol and run the experiments in which the electroencephalogram (EEG), the electrocardiogram (ECG) and the electrooculogram (EOG) were recorded. Such neurophysiological signals were compared with the behavioral and subjective data in order to obtain a more accurate overview of the considered cognitive phenomenon (Triangulation approach).

June 2012

Research collaboration

Institute of Cognitive & Intelligent Computation, Hangzhou Dianzi University (Hangzhou, China)

- Setup of the laboratories similar to those already working at the IRCCS Fondazione Santa Lucia for the study of mental workload and the drowsiness levels in simulated driving experiments with EEG and other physiological signals. Training of local scientists on the methodologies to be used in the analysis of such cerebral activity.

December 2011

Flight Safety Officer

National Air Force Ministry (Rome, Italy)

- I got the first position at the course for Flight Safety Officers at the Italian Air Force Department. The course allowed me to gain applicable new skills to positively impact the company's safety, the planning of the experimental protocols, the analysis of the results, and the evaluation of Human Factors in operational environments. The course was divided into three main modules: "Prevention", "Investigation" and "Juridical/Legal". Within the investigation module, visitors were engaged in investigating the possible causes of accidents reconstructed in various crash sites. During the practical phase, television interviews conducted by a professional journalist were simulated, applying the principles and techniques of communication learned in the classroom.

March 2009

Master Degree in Electrical Engineering

ALMA MATER STUDIORUM University of Bologna (Bologna, Italy)

- Topics covered included: Biomedical data and signals processing, Biomechanic, Bioimaging, Rehabilitation Bioengineering, Prosthetics and Orthotics, Clinic Engineering and Solid State sensors.
- Title of the final dissertation: "Off-line analysis and classification of mental workload through electroencephalography (EEG)". The work consisted in a series of experiments employing cognitive tasks under different difficulty levels during which the participant's brain activity was recorded. The results showed how an increase of absolute frontal theta power and a decrease of absolute parietal alpha power were significantly correlated to the experienced mental workload

January 2006

Bachelor Degree in Electrical Engineering

ALMA MATER STUDIORUM University of Bologna (Bologna, Italy)

- Topics covered included: Maths, Physics, Analogic and Digital Electronic, Microelectronic, Electromagnetic systems, Electronic communications and Economy.
- Title of the final dissertation: "Development and realization of a patch antenna for WLAN and UMTS applications".

July 2002

Electrical and Telecommunication Technician

Technical and Industrial Institute (ITIS) "Leonardo da Vinci" (Rimini, Italy)

- Upper Secondary School

WORK ACTIVITIES

Main projects

In the last years (2010 – 2022), Gianluca Borghini has been involved in several EU and military projects as “scientific manager”, in particular as the leader in the development of algorithms and neurophysiological metrics to the users’ mental states and teamwork assessment. These methodology and metrics have been validated in controlled and realistic contexts as Aerospace, Aviation, Maritime, Surgery, and Car Driving under the WP7, SESAR, H2020 and Horizon Europe funding programs:

- IceBlue
- SpaceltUp
- Trusty (www.sesarju.eu/projects/trusty)
- Coda (<https://sesar.eu/projects/coda>)
- Safemode (www.safemodeproject.eu)
- Mindtooth (www.mindtooth.com)
- Artimation (www.artimation.eu)
- Fitdrive (www.fitdrive.eu)
- Nina (www.nina-wpe.eu)
- Moto (www.moto-project.eu)
- Stress (www.stressproject.eu)
- Minima (www.minima-project.eu)
- Simusafe (www.simusafe.eu)
- WorkingAge (www.workingage.eu)
- SmokeFreeBrain (www.smokefreebrain.eu)

Tutoring activities

Gianluca Borghini has tutored 4 PhD theses in Morphogenesis And Tissue Engineering, master theses in Medical Biotechnologies (10), Biomedical Engineering (15), and Aerospace Engineering (1), and bachelor theses in Biomedical Engineering (3). Furthermore, he did tutoring activities at the University of Rome Sapienza in the following courses: Medicine, Physiotherapy, Nursing, Aerospace and Astronautic Engineering, and Medical Biotechnologies.

Awards

Gianluca Borghini has been granted by different Awards for scientific research:

- 2020 - 2024: enlisted in the 2% of the best scientists in the world in the area neuroscience/biomedical engineering.
- 2019: Scientific Award “Italian Best Awards”, Chamber of Deputies, Rome, Italy.
- 2016: Scientific Award “Massimo Grattarola” for the best PhD thesis, National Bioengineering Group (Gruppo Nazionale di Bioingegneria – GNB), Brixen, Italy
- 2016: Scientific Award “I Guidoniani” for the best research work in Aviation and Aerospace Medicine, Italian Air Force, Trieste, Italy.
- 2013: Travel Award, Standing Steering Committee of the 1st IEEE EMBS international summer school on neural engineering (ISSNE’13), Shanghai, China.
- 2012: Scientific Award “I Guidoniani” for the best research work in Aviation and Aerospace Medicine, Italian Air Force, Bari, Italy

Editorial activity Editorial board member for Brain Sciences
Editorial board member for Sensors
Editorial board member for Behavioral Sciences
Associate Editor for Frontiers in Neuroergonomics
Associate Editor for International Journal of Bioelectromagnetism (IJBEM)
Guest Associate Editor for Computational Intelligence and Neuroscience
Guest Associate Editor for Frontiers in Human Neuroscience
Guest Associate Editor for Frontiers in Human Neuroscience
Guest Associate Editor for Mathematical Biosciences and Engineering

Reviewer for peer-review and high-impact factor journals like Neuroscience & Biobehavioral Reviews, Scientific Reports, Nature, Brain Sciences, Social Cognitive and Affective Neuroscience, IEEE Transactions on Biomedical Engineering, IEEE Transactions on Neural Systems & Rehabilitation Engineering, Brain Topography, Neuroimage, Journal of Neuroscience Methods, Journal of Neural Engineering, Sensors, Frontiers in Human Neuroscience, Frontiers in Neuroscience. Specifically, currently 39 reviews with a review-to-publication-rate of 0.5:1 (Median = 0.3:1, source: Publons).

Invited presentations Gianluca Borghini has delivered more than 20 lectures invited on international scientific conferences across the 14 years of activities in the area of neuroscience.

Patents Gianluca Borghini has been granted the following EU patent related to the estimation of the mental workload measured by cerebral activities:

EU patent n. EP3143933A1. Aricò P, Borghini G, Di Flumeri G, Babiloni F. Method for estimating a mental state, in particular workload, and related apparatus.

Grants	SpaceltUp (Italian PNRR project):	133 k Euro
	IceBlue (Italian Space Agency project):	92 k Euro
	Progetto Ateneo Grande 2024	55.8 k Euro
	Progetto Ateneo Medio 2023	11.2 k Euro
	Progetto Ateneo Medio 2022	10 k Euro
	Progetto Ateneo Medio 2021	10 k Euro

PUBLICATIONS

1. Journal Paper - Journal Paper - Daniele Amore, Daniele Germano, Gianluca Di Flumeri, Pietro Aricò, Vincenzo Ronca, Andrea Giorgi, Alessia Vozzi, Rossella Capotorto, Stefano Bonelli, Vanessa Arrigoni, Paola Tomasello, Fabrice Drogoul, Jean Paul Imbert, Géraud Granger, Fabio Babiloni and Gianluca Borghini (2025). Brain cortical areas characterization and machine learning – based measure of Rasmussen's S-R-K model. *Brain Sciences*
2. Francesca Dello Iacono, Luca Guinti, Marianna Cecchetti, Andrea Giorgi, Dario Rossi, Vincenzo Ronca, Alessia Vozzi, Rossella Capotorto, Fabio Babiloni, Pietro Aricò, Gianluca Borghini, Manuel Picardi, Gianluca Di Flumeri (2025). Analysis of neurophysiological correlates of mental fatigue in both monotonous and demanding driving conditions. *Brain Sciences*.
3. Conference Paper - Vincenzo Ronca, Pietro Aricò, Gianluca Di Flumeri, Andrea Giorgi, Rossella Capotorto, Alessia Ricci, Fabio Babiloni, Gianluca Borghini (2025). Unobtrusive Monitoring of Attention and Mental Workload through Facial Video in Simulated Operational Scenarios. *IEEE Tech Defense*.
4. Conference Paper - Christophe Hurter, Alexandre Veyrie, Sara Kebir, Guillaume Truong, Stefano Bonelli, Gianluca Borghini, Pietro Arico, Fabio Babiloni, Marc Baumgartner, Luca Bergesio, Ana Maria Bernardos, Juan Alberto Besada, Almudena Calatrava, Jose J. Canas Delgado, Lidia Garcia, Raquel Garcia Lasheras, Gilles Gawinowski, Martina Jadronova, Bart Klein Obbink, Florencia Lema, Alfonso Levantesi, Nischal Lingam, Patricia Maria Lopez De Fruto, Stathis Malakis, Hossein Mapar, Laurie Marsman, Job Smeltink, Anthony Smoker, Laurence Rognin, Marko Terzioski, Maykel van Miltenburg, Tommaso Vendruscolo, Anna Giulia Vicario, Jeanine Vlasblom, Chen Xia, Rolf Zon (2025). Toward a Neurophysiological Approach to Assess Optimal Human-Machine Teaming in the Critical Environment of Air Traffic Control. *Engineering Psychology and Cognitive Ergonomics (HCII2025)*.
5. Daniele Germano, Vincenzo Ronca, Rossella Capotorto, Gianluca Di Flumeri, Gianluca Borghini, Andrea Giorgi, Fabio Babiloni, Pietro Arico (2025). Towards the Correction of Covariate Shift in EEG-Based Passive Brain-Computer Interfaces for Out-of-Lab Applications. *47th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*.
6. Conference Paper - Vincenzo Ronca, Gianluca Di Flumeri, Leonardo Lungarini, Rossella Capotorto, Daniele Germano, Andrea Giorgi, Gianluca Borghini, Fabio Babiloni, Pietro Arico (2025). A Novel Multi-Stage Algorithm for Real-Time Detection and Correction of Ocular Artifacts in EEG: A Calibration-Free Approach. *47th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*.
7. Conference Paper - Margherita Bernabei, Francesco Simone, Manuel Lombardi, Andrea Montaruli, Rossella Capotorto, Vincenzo Ronca, Gianluca Borghini, Fabrice Drogoul, Riccardo Patriarca (2025). Adapting on the fly: a data-driven approach to capture adaptive behaviors in collaborative human-machine systems. *FRAMily 2025*.
8. Journal Paper - Vincenzo Ronca, Lidia Castagneto Gisse; Maria Irene Bellini; Alessandra Iodice; Pietro Aricò; Gianluca Di Flumeri; Andrea Giorgi; Alessia Vozzi; Rossella Capotorto; Stefano Bonelli; Laura Moens; Fabio Babiloni; Giovanni Casella; Gianluca Borghini (2025). Mutual

Information-based Teamwork Evaluation in Real Environment: Exploratory Investigation with Professional Surgeons. *Frontiers in Network Physiology*.

9. Journal Paper - Alessia Ricci, Vincenzo Ronca, Rossella Capotorto, Andrea Giorgi, Alessia Vozzi, Daniele Germano, Gianluca Borghini, Gianluca Di Flumeri, Fabio Babiloni, Pietro Aricò (2025). Understanding the Unexplored: the Gap in Human Factors Characterization for Industry 5.0. *Applied Sciences*.
10. Conference Paper - Vincenzo Ronca, Davide Capogreco, Alessia Ricci, Rossella Capotorto, Andrea Giorgi, Alessia Vozzi, Gianluca Di Flumeri, Gianluca Borghini, Fabio Babiloni, Pietro Aricò (2024). Simulation study on novel processing algorithms for ocular artifacts' detection and correction from electroencephalographic techniques. The 4th International Electronic Conference on Brain Sciences. Section: Neurotechnology and Neuroimaging.
11. Conference Paper - Ronca Vincenzo, Castagneto Gissey Lidia, Bellini Maria Irene, Iodice Alessandra, Sbardella Emilia, Vincenzi Ludovica, Sada Valentina, Aricò Pietro, Di Flumeri Gianluca, Giorgi Andrea, Vozzi Alessia, Capotorto Rossella, Bonelli Stefano, Moens Laura, Babiloni Fabio, Casella Giovanni, Borghini Gianluca (2024). Validation of an EEG – based stress index for surgeons' stress assessment during real working activities. 18th International Meeting on Behavioural Science Applied to Healthcare (BSAH).
12. Journal Paper - Claudio Lantieri, Ennia Mariapaola Acerra, Margherita Pazzini, Andrea Simone, Gianluca Di Flumeri, Gianluca Borghini, Fabio Babiloni, Pietro Aricò, Paola Lanzi, Valeria Vignali (2024). The impact of Adaptive Cruise Control on the drivers' workload and attention. *IEEE Access*
13. Conference Paper - Vincenzo Ronca, Davide Capogreco, Alessia Ricci, Rossella Capotorto, Andrea Giorgi, Alessia Vozzi, Gianluca Di Flumeri, Gianluca Borghini, Fabio Babiloni, Pietro Aricò (2024). Simulation study on novel processing algorithms for the ocular artifacts' detection and correction from the EEG. The 4th International Electronic Conference on Brain Sciences (IECBS2024).
14. Journal Paper - Vincenzo Ronca, Rossella Capotorto, Gianluca Di Flumeri, Andrea Giorgi, Alessia Vozzi, Daniele Germano, Gianluca Borghini, Giulia Cartocci, Dario Rossi, Bianca Maria Serena Inguscio, Fabio Babiloni, Pietro Aricò (2024). Optimizing EEG Signal Integrity: A Comprehensive Guide to Ocular Artifact Correction. *Bioengineering*.
15. Journal Paper - Andrea Giorgi, Gianluca Borghini, Francesca Colaiuda, Stefano Menicocci, Vincenzo Ronca, Alessia Vozzi, Dario Rossi, Pietro Arico, Rossella Capotorto, Simone Sportiello, Marco Petrelli, Carlo Polidori, Rodrigo Varga, Marteyn van Gasteren, Fabio Babiloni, Gianluca Di Flumeri (2024). Driving Fatigue and Ocular Behavior: an EEG-driven Analysis of Visual Attention in a Driving Simulation Task. *Behavioral Sciences*
16. Journal Paper - Stefano Menicocci, Viviana Lupo, Silvia Ferrara, Andrea Giorgi, Eleonora Serra, , Fabio Babiloni and Gianluca Borghini (2024). Fake-news attitude evaluation in terms of visual attention and personality traits. A preliminary study for mitigating the Cognitive Warfare. *Behavioral Sciences*.

17. Journal Paper - Vincenzo Ronca, Alessia Ricci, Rossella Capotorto, Luciano Di Donato, Daniela Freda, Marco Pirozzi, Eduardo Palermo, Luca Mattioli, Giuseppe Di Gironimo, Domenico Coccorese, Sara Buonocore, Francesca Massa, Daniele Germano, Gianluca Di Flumeri, Gianluca Borghini, Fabio Babiloni, Pietro Aricò (2024). How immersed are you? State of the art of the neurophysiological characterization of the embodiment in mixed reality for out-of-the-lab applications. *Applied Sciences*.
18. Journal Paper - Vincenzo Ronca, Gianluca Di Flumeri, Andrea Giorgi, Alessia Vozzi, Rossella Capotorto, Daniele Germano, Nicolina Sciaraffa, Gianluca Borghini, Fabio Babiloni, and Pietro Aricò (2024). o-CLEAN: A novel multi-stage algorithm for the ocular artifacts' correction from EEG data in out-of-the-lab applications. *Journal of Neural Engineering*.
19. Journal Paper - Dario Rossi, Giulia Cartocci, Bianca M. S. Inguscio, Giulia Capitolino, Gianluca Borghini, Gianluca Di Flumeri, Vincenzo Ronca, Andrea Giorgi, Alessia Vozzi, Rossella Capotorto, Fabio Babiloni, Alessandro Scorpecci, Sara Giannantonio, Pasquale Marsella, Carlo Antonio Leone, Rosa Grassia, Francesco Galletti, Francesco Ciodaro, Cosimo Galletti, Pietro Aricò (2024). Characterization of cochlear implant artifact and removal based on multi-channel wiener filter in unilateral child patients. *Bioengineering*.
20. Journal Paper - Rossella Capotorto, Vincenzo Ronca, Nicolina Sciaraffa, Gianluca Borghini, Gianluca Di Flumeri, Lorenzo Mezzadri, Alessia Vozzi, Andrea Giorgi, Daniele Germano, Fabio Babiloni and Pietro Aricò (2024). Cooperation objective evaluation in aviation: validation and comparison of two novel approaches in simulated environment. *Frontiers in Neuroinformatics*
21. Journal Paper - Dario Rossi, Pietro Aricò, Gianluca Di Flumeri, Vincenzo Ronca, Andrea Giorgi, Alessia Vozzi, Rossella Capotorto, Bianca Maria Serena Inguscio, Giulia Cartocci, Fabio Babiloni, Gianluca Borghini (2024). Analysis of head micromovements and body posture for vigilance decrement assessment. *Applied Sciences*.
22. Journal Paper - Gianluca Borghini, Vincenzo Ronca, Andrea Giorgi, Pietro Aricò, Gianluca Di Flumeri, Barry Kirwan, Ivan De Visscher, Mikhail Goman, Jonathan Pugh, Nikolay Abramov, Géraud Granger, Diana Paola Moreno Alarcon, Elizabeth Humm, Simone Pozzi, Fabio Babiloni (2024). Reducing Flight Upset Risk and Startle Response: a Study of the Wake Vortex Alert with Licensed Commercial Pilots. *Brain Research Bulletin*
23. Journal Paper - Vincenzo Ronca, Francois Brambati, Linda Napoletano, Cyril Marx, Sandra Trösterer, Alessia Vozzi, Pietro Aricò, Andrea Giorgi, Rossella Capotorto, Gianluca Borghini, Fabio Babiloni, Gianluca Di Flumeri (2024). A novel EEG-based assessment of distraction in simulated driving under different road and traffic conditions. *Brain Sciences*
24. Journal Paper - Andrea Giorgi, Vincenzo Ronca, Alessia Vozzi, Pietro Aricò, Gianluca Borghini, Rossella Capotorto, Luca Tamborra, Ilaria Simonetti, Simone Sportiello, Marco Petrelli, Carlo Polidori, Rodrigo Varga, Marteyn Van Gasteren, Arnab Barua, Mobyen Uddin Ahmed, Fabio Babiloni, Gianluca Di Flumeri (2023). Neurophysiological mental fatigue assessment for developing user centred Artificial Intelligence as a solution for autonomous driving. *Frontiers in Neurorobotics*.
25. Conference Paper – Gianluca Borghini, Andrea Giorgi, Vincenzo Ronca, Lorenzo Mezzadri, Rossella Capotorto, Gianluca Di Flumeri, Fabio Babiloni, Pietro Aricò (2023). Cooperation and

Mental States Neurophysiological Assessment for Pilots' Training and Expertise Evaluation. IEEE TechDefense 2023 Proceedings.

26. Journal Paper – Daniele Germano, Nicolina Sciaraffa, Vincenzo Ronca, Andrea Giorgi, Giacomo Trulli, Gianluca Borghini, Gianluca Di Flumeri, Fabio Babiloni, Pietro Aricò (2023). Unsupervised detection of covariate shift due to changes in EEG headset position towards an effective out-of-lab use of passive Brain Computer Interface. Applied Sciences
27. Journal Paper – Ronca, V., Uflaz, E., Turan, O., Bantan, H., MacKinnon, S. N., Lommi, A., ... & Borghini, G. (2023). Neurophysiological Assessment of An Innovative Maritime Safety System in Terms of Ship Operators' Mental Workload, Stress, and Attention in the Full Mission Bridge Simulator. Brain Sciences, 13(9), 1319.
28. Journal Paper – Gianluca Di Flumeri, Andrea Giorgi, Daniele Germano, Vincenzo Ronca, Alessia Vozzi, Gianluca Borghini, Luca Tamborra, Iliaria Simonetti, Rossella Capotorto, Silvia Ferrara, Nicolina Sciaraffa, Fabio Babiloni, Pietro Aricò (2023). A neuroergonomic approach fostered by wearable EEG for the multimodal assessment of drivers trainees. Sensors.
29. Journal Paper - Vincenzo Ronca, Ana Martinez-Levy, Alessia Vozzi, Andrea Giorgi, Pietro Aricò, Rossella Capotorto, Gianluca Borghini, Fabio Babiloni, Gianluca Di Flumeri (2023). Wearable Technologies for Electrodermal and Cardiac Activity measurements: a Comparison between Fitbit Sense, Empatica E4 and Shimmer GSR3+. Sensors.
30. Conference Paper - Gianluca Borghini, Frédéric Rooseleer, Barry Kirwan, Ivan De Vissche, Mikhail Goman, Jonathan Pugh, Nikolay Abramov, Géraud Granger, Diana Moreno-Alarcon, Elizabeth Humm, Simone Pozzi (2023). Airfox UPRT Flight Simulation with Wake Vortex Encounter Events. ESREL 2023 Conference
31. Conference Paper – Gianluca Borghini, Pietro Aricò, Gianluca Di Flumeri, Alessia Vozzi, Vincenzo Ronca, Andrea Giorgi, Viviana Lupo, Fabio Babiloni (2023). TRAIN&BRAIN: Neurophysiological – based methods for a more strategic and advanced training management and defence systems. 17th NATO Operations Research and Analysis Conference Proceedings.
32. Conference Paper - Gianluca Borghini, Vincenzo Ronca, Pietro Aricò, Gianluca Di Flumeri, Andrea Giorgi, Stefano Bonelli, Laura Moens, Lidia Castagneto Gissey, Maria Irene Bellini, Giovanni Casella, Fabio Babiloni (2023). Teamwork objective assessment through neurophysiological data analysis: a preliminary multimodal data validation. AHFE 2023 Conference.
33. Conference Paper – Giorgi, A., Ronca, V., Vozzi, A., Aricò, P., Borghini, G., Tamborra, L., ... & Di Flumeri, G. (2023). Multimodal Characterization of Mental Fatigue on Professional Drivers. Neuroergonomics and Cognitive Engineering, 93.
34. Conference Paper – Viviana Lupo, Stefano Menicocci, Silvia Ferrara, Gianluca Borghini, Fabio Babiloni (2023). Fake news attitude recognition: how users' behavioral and implicit components change based on conscientiousness and visual attention. The NATO Science & Technology Organization HFM-361 Symposium

35. Editorial – Gaia Romana Pellicano, Katie Aafjes-van Doorn, Alessandra Anzolin, Danilo Arnone, Gianluca Borghini (2023). Use of Neuroimaging Techniques for the Prevention, Assessment, and Treatment of Mood Disorders. *Frontiers in Psychiatry*.
36. Journal Paper – Neurophysiological evaluation of students' experience during remote and face-to-face lessons. A case study at driving school (2022). Ilaria Simonetti, Luca Tamborra, Andrea Giorgi, Vincenzo Ronca, Alessia Vozzi, Pietro Aricò, Gianluca Borghini, Nicolina Sciaraffa, Arianna Trettel, Fabio Babiloni, Manuel Picardi, Gianluca Di Flumeri. *Brain Sciences*
37. Conference Paper - Gianluca Borghini, Pietro Aricò, Nicolina Sciaraffa, Gianluca Di Flumeri, Lorenzo Mezzadri, Fabio Babiloni (2022). Real-time neurophysiological measure of individual and team operators' cognitive performance for defence applications. 16th NATO Operations Research and Analysis Conference Proceedings.
38. Conference Paper – Vincenzo Ronca, Gianluca Di Flumeri, Alessia Vozzi, Andrea Giorgi, Pietro Arico, Nicolina Sciaraffa, Fabio Babiloni, Gianluca Borghini (2022). Validation of an EEG-Based Neurometric for Online Monitoring and Detection of Mental Drowsiness While Driving. Conference: 2022 44th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC).
39. Conference Paper – Gianluca Borghini, Pietro Arico, Gianluca Di Flumeri, Nicolina Sciaraffa, Antonio Di Florio, Vincenzo Ronca, Andrea Giorgi, Lorenzo Mezzadri, Renzo Gasparini, Roberto Tartaglino, Arianna Trettel, Fabio Babiloni (2022). Real-Time Pilot Crew's Mental Workload and Arousal Assessment During Simulated Flights for Training Evaluation: A Case Study Conference: 2022 44th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC).
40. Christophe Hurter, Augustin Degas, Arnaud Guibert, Nicolas Durand, Ana Ferreira, Nicola Cavagnetto, Mir Riyanul Islam, Shaibal Barua, Mobyen Uddin Ahmed, Shahina Begum, Stefano Bonelli, Giulia Cartocci, Gianluca Di Flumeri, Gianluca Borghini, Pietro Aricó, Fabio Babiloni. Toward a more transparent and explainable conflict resolution algorithm for air traffic controllers. 34th Conference of the European Association for Aviation Psychology
41. Conference Paper - Siyang Song, Vincenzo Ronca, Gianluca Borghini, Hesam Sagha, Vera Rick, Marteyn van Gasteren and Hatice Gunes (2022). Deep Learning-Based Assessment of Facial Periodic Affect in Work-Like Settings. 1st International Workshop and Challenge on People Analysis: From Face, Body and Fashion to 3D Virtual Avatars (WCPA Workshop at ECCV 2022). doi: 10.17863/CAM.87966.
42. Conference Paper - Rooseleer, Frederic, Kling, Fanni, Pasztor, Attila, Kirwan, Barry, Humm, Elizabeth, Borghini, Gianluca, Pugh, Jon, and Moreno Alarcon, Diana Paola (2022) A Tale of Two Simulations -- the Challenges of Validating a Ground-Air Collaborative Safety Alert. Proceedings of the 32nd European Safety and Reliability Conference (ESREL 2022)
43. Journal Paper - Frédéric Rooseleer, Barry Kirwan, Diana Paola Moreno Alarcon, Elizabeth Humm, and Gianluca Borghini (2022). The Application of Human Factors in Wake Vortex Encounter Flight Simulations for the Reduction of Flight Upset Risk and Startle Response. *Human Error, Reliability, Resilience, and Performance*, Vol. 33, 2022, 32–42

44. Journal Paper - Nicolina Sciaraffa, Gianluca Di Flumeri, Daniele Germano, Andrea Giorgi, Antonio Di Florio, Gianluca Borghini, Alessia Vozzi, Vincenzo Ronca, Fabio Babiloni, Pietro Aricò (2022). Evaluation of a new lightweight EEG technology for translational applications of passive Brain-Computer Interfaces. *Frontiers in Human Neuroscience*
45. Conference - Frederic Rooseleer, Attila Pasztor, Fanni Kling, Elizabeth Humm, Gianluca Borghini, Jonathan Pugh, Barry Kirwan, Mikhail Goman, Diana Paola Moreno Alarcon (2022). A Tale of Two Simulations – the Challenges of Validating an Air-Ground Collaborative Safety Alert. *ESREL 2022*
46. Journal Paper – Gianluca Borghini, Pietro Aricó, Gianluca Di Flumeri, Vincenzo Ronca, Andrea Giorgi, Nicolina Sciaraffa, Claudio Conca, Simone Stefani, Paola Verde, Angelo Landolfi, Roberto Isabella, Fabio Babiloni (2022). Air Force Pilot Expertise Assessment with Regard to Mental Effort Requested during Unusual Attitude Recovery Flight Training Simulations. *Safety*.
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According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV.

Roma, 19/09/2025

Gianluca Borghini