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F.to Pietro Aricò

PIETRO ARICÒ

Curriculum Vitae

Place: Rome, Italy

Date: 29/09/2021

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Part II – Education

Type	Year	Institution	Notes (Degree, Experience,...)
PhD	2014	University of Bologna “Alma Mater Studiorum”	Bioengineering. Thesis title: <i>Mental states monitoring through passive brain-computer interface systems</i>
Master’s Degree	2010	University of Rome “La Sapienza”	Master’s Degree, Biomedical Engineering, degree mark: 110 (out of 110) /110. Thesis title: <i>Development and validation of a P300-based BCI in covert attention condition: GeoSpell</i>
Bachelor’s Degree	2007	University of Messina	Bachelor’s Degree, Electronic Engineering, degree mark: 110 (out of 110) cum laude/110. Thesis title: <i>Modelling and study of MRAM written by non-uniform spin polarized currents</i>
Licensure 01	2019	Italian Ministry of Education, Universities and Research (MIUR)	National Scientific Qualification as Associate Professor (art.16 of the law 30 December 2010, n.240) in Bioengineering (09/G2)
Licensure 02	2011	University of Rome “La Sapienza”	Licensed Professional Industrial Engineer

Part III – Appointments*III A – Academic Appointments*

Start	End	Institution	Position
01/02/2020	Present	Dept of Molecular Medicine, University of Rome “La Sapienza”, Italy	Subject Expert
01/02/2016	31/01/2020	Dept of Molecular Medicine, University of Rome “La Sapienza”, Italy	Postdoctoral researcher. <u>Assignment</u> : <i>Research in passive brain-computer interface systems/ processing and classification of biosignals.</i>
01/02/2014	31/01/2016	Dept of Physiology and Pharmacology, University of Rome “La Sapienza”	Postdoctoral researcher. <u>Assignment</u> : <i>Research in passive brain-computer interface systems/ processing and classification of biosignals.</i>
04/06/2013	03/09/2013	International Institute of Neuroscience “SINAPSE”, National University of Singapore (NUS)	Research fellow. <u>Assignment</u> : <i>Development of a passive-BCI system for the online measurement of Mental Workload through classification of features coming from EEG.</i>

III B – Other Appointments

Start	End	Institution	Position
07/09/2015	Present	BrainSigns company	Chief Technology Officer of R&D department, Project Manager. <u>Assignment:</u> <i>Technology transfer of the research performed in BCI field, to generate services and products. Writing and management of international projects (i.e. SMEInstrument, EIC Accelerator, Fast Track to Innovation programs) at high Technology Readiness Level (TRL).</i>
16/04/2012	31/08/2012	TECNO.TIB.E.R.I.S (consorzio tecnologie tiburtino per l'eccellenza nella ricerca, l'innovazione e lo sviluppo) Consortium	Bioengineer consultant. <u>Assignment:</u> <i>Development of a framework for the classification of EEG signals recorded from healthy subjects or patients with motor disabilities (locked in people) with the aim to realize a Brain-Computer Interface system for communication and control</i>
01/11/2012	31/05/2014	ALFAMEG company	Bioengineer consultant. <u>Assignment:</u> <i>Development of assistive technology (hardware and software) for research labs.</i>
01/12/2010	31/01/2014	Neuroelectrical Imaging and BCI Laboratory (NEIlab) at the IRCCS Fondazione Santa Lucia of Rome	Bioengineer researcher. <u>Assignment:</u> <i>Research in Brain-Computer Interface field, with particular regard for communication and control, and for rehabilitation purposes.</i>

Part IV – Research Activities

Keywords	Brief Description
Brain-Computer Interface	My research activity has always been focused on one of the most innovative and fascinating areas of bioengineering applied to neuroscience, the brain-computer interface (BCI), defined as “a system that measures Central nervous System (CNS) activity and converts it into artificial output that replaces, restores, enhances, supplements, or improves natural CNS output and thereby changes the ongoing interactions between the CNS and its external or internal environment, Wolpaw et al., 2012”. In this regard, I had the possibility to work with different types of BCI systems, by the involvement in many national and international projects (see sections VIII and XI), in particular (i) as assistive technology (i.e. communication and control), (ii) for rehabilitation purposes (i.e. motor imagery) and (iii) for “passive” monitoring of internal states of the user (i.e. workload, attention, stress, etc) while dealing with a task (i.e. driving a car or piloting an aircraft). My specific background as bioengineer, is focused on the (i)
Machine Learning	
Neuroscience	
Mental & Emotional states	
Neurophysiological Signal processing (EEG, ECG, PPG, EDA, EMG, EOG)	

<p>processing and features extraction of different kind of biosignals (i.e. electroencephalography-EEG, electrocardiography-ECG, photoplethysmography-PPG, Electro Dermal Activity-EDA, Electromyography-EMG, Electrooculography-EOG), and (ii) machine learning techniques able to employ such mentioned features to maximize BCI performances.</p>
<p>BCI for communication & control: At the beginning of my activity I worked with BCI systems for communication and control, for locked-in patients. In particular, it can be possible to decode some specific features extracted from the EEG signal of the subjects, and employ them as a communication and/or control channel. In this regard, I got great knowledge in processing EEG signals in time domain, extract and analyse Event Related Potentials (i.e. ERPs, P300 and N200 potentials). In this regard, I have developed an algorithm able to maximize the signal to noise ratio for an improved extraction of ERPs from the background EEG noise. At the same time, I had the possibility to deal with machine learning techniques (both linear and non linear) applied to such mentioned features, to be used to enhance BCI performances.</p>
<p>BCI for rehabilitation: The principle at the basis of this kind of BCI is that the system can be used to “reinforce” specific brain patterns of post-stroke patients, while performing simple tasks (e.g. grasping an object), and so fasten the rehabilitation phase. I have generated in this regard a hybrid BCI system that employ at the same time EEG and EMG signals, to maximize the reinforcement of physiological brain patterns, inhibiting the activation of pathological patterns. During this activity I got expertise in analysing frequency domain features of EEG signals.</p>
<p>Passive BCI: This kind of BCI is used to “passively” monitor mental and emotional states of the user, while dealing with specific operational tasks (e.g. driving a car or piloting an airplane). In particular, my activity was focused on the extraction and classification (by using machine learning techniques) of specific features, responsive to variations of actual mental states of the user. In this regard, I had the possibility to deal with the processing of different kind of biosignals, i.e. EEG, ECG, PPG, EDA, EOG, and to face with all the constraints of the "real-setting" that are often not taken into account by most of the work carried out in literature (laboratory-setting). In this framework I had patented an algorithm able to generate in real-time a measure of the mental workload experienced by the user, by using his/her EEG signals.</p>

Part V – Teaching experience

Year	Institution	Lecture/Course
2017 to 2020	University of Rome “La Sapienza”	<p>Examination committee member within the courses:</p> <p><u>Bioingegneria elettronica ed applicazioni cliniche – Telemedicina e robotica</u> of “Biotechnologie Mediche” MSc program</p> <p><u>Neuroeconomia e neuromarketing</u> of “Psicologia della Comunicazione e del</p>

		Marketing” MSc program, Sapienza University of Rome, Italy
2019	School of Sport CONI	Lecture (Formal teaching fellow) at the seminar "Leadership. Understanding, connecting and getting more"
2018	School of Sport CONI	Lecture (Formal teaching fellow) at the seminar "Neuroscience and sports: measuring the sporting performance of stress"
2013 to 2020	University of Rome "La Sapienza"	Lectures and tutoring activity within the courses: <u>Bioingegneria elettronica ed applicazioni cliniche – Telemedicina e robotica</u> of "Biotecnologie Mediche" MSc program (BIO/09) <u>Analisi dei Biosistemi Complessi</u> of "Biomedical Engineering" MSc program (ING-INF/06) AA2013/2014-2014/2015 <u>Neuroscienze Industriali</u> of "Biomedical Engineering" MSc program (ING-INF/06) AA2016/2017
2011 - present	University of Rome "La Sapienza"	Co-Tutor of 1 bachelor, 5 master and 3 PhD theses (see next section for further details)

VB – Supervision of graduate and doctoral thesis

Year	Title	Program	Role
2020 - present	Employment of neurophysiological measures to enhance training of professionals in a managerial context	PhD in Morphogenesis and Tissue Engineering, <i>University of Rome "La Sapienza"</i>	Co-Tutor
2016-2019	Analysis of the human perception during the vision of social communications	PhD in Morphogenesis and Tissue Engineering, <i>University of Rome "La Sapienza"</i>	Co-Tutor
2015-2018	Electroencephalography-based measures of human mental workload in operational environments for the development of Brain-Computer Interfaces passive	PhD in Morphogenesis and Tissue Engineering, <i>University of Rome "La Sapienza"</i>	Co-Tutor
2020	Towards passive Brain-Computer Interface employment in everyday-life applications	Master's Degree in Data Science, <i>University of Rome "La Sapienza"</i>	Company Tutor
2015	Support to the upper limb rehabilitation of patients with stroke outcomes by analyzing	Master's Degree in Biomedical Engineering, <i>University of Rome "La</i>	Co-Tutor

	electromyographic pattern and joint angles", University of Rome "La Sapienza	<i>Sapienza"</i>	
2014	Analysis of electromyographic patterns in patients with stroke outcomes	Master's Degree in Biomedical Engineering, <i>University of Rome "La Sapienza"</i>	Co-Tutor
2012	Development and validation of a system Brain - Computer Interface based on stationary visual evoked potential	Master's Degree in Automatic Engineering and Automation Systems, <i>University of Rome "La Sapienza"</i>	Co-Tutor
2011	Analysis of evoked potentials with reference to the use of brain-computer interfaces	Master's Degree in Biomedical Engineering, <i>University of Rome "La Sapienza"</i>	Co-Tutor
2011	Use of visual evoked potential stationary (SSVEP) in the context of brain computer interfaces	Bachelor's Degree in Clinical Engineering, <i>University of Rome "La Sapienza"</i>	Co-Tutor

Part VI – Society memberships, Awards and Honors

Year	Title
2021 - present	Marie Curie Alumni Association
2014-2015	- IEEE Membership: from 01/03/2014 to 31/12/2015 - IEEE Young Professionals: from 01/01/2014 to 31/12/2015 - IEEE Engineering in Medicine and Biology Society: from 01/03/2015 to 31/12/2015
2014 - present	National Group of Bioengineering (GNB)
2012 - present	Italian Association of Clinical Engineering (AIIC)
2013	Finalist - Scientific Award "I Guidoniani" - Air Traffic Control Section for young researchers (medicine and science section, 2013), awarded by the Italian Association of Aeronautical and Space Medicine (AIMAS), for the work entitled "Brain-computer interface for online estimation of pilots' mental load".
2014	Award "Massimo Grattarola" (twelfth edition), Assigned by GNB. For originality and scientific value for the PhD thesis entitled: "Mental states passive monitoring through Brain-Computer Interface systems"
2014	Scientific Prize "I Guidoniani" - Section Air Traffic Control for young researchers (section Medicine and Science, 2014), awarded by the Association of Italian Aeronautical and Space Medicine (AIMAS), for the work entitled "Study of the mental load of the Comptroller Air Traffic during training missions phases to the simulator"

Part VII – Funding Information [grants as PI-principal investigator or I-investigator]

Year	Title	Program	Grant value
2020	Detecting "windows of responsiveness" in Minimally	GR-2019-12369824	€ 332.778,00

	Conscious State patients: a neurophysiological study to provide a multimodal-passive Brain-Computer Interface - I		
2017	GENIUS - Multidimensional Model Based Machine Learning for Medical Training Assessment - PI	“Research Initiation Projects/Avvio alla ricerca” DR n. 213/2017, University of Rome “La Sapienza”	€ 2.000,00
2016	GURU - Cognitive Neurometrics for Training Support - PI	“Research Initiation Projects/Avvio alla ricerca” DR n. 1809/2016, University of Rome “La Sapienza”	€ 2.100,00
2015	SAFER - neurophysiological of Error Risk Assessment in operational environments - PI	“Research Initiation Projects/Avvio alla ricerca” DR n. 1048/2015, University of Rome “La Sapienza”	€ 2.000,00
2014	Neurophysiological analysis in real time of the mental workload of Air Traffic Controller - PI	“Research Initiation Projects/Avvio alla ricerca” DR n. 847/2014, University of Rome “La Sapienza”	€ 1.500,00
2013	SMARTile - System for Monitoring and Rehabilitation Assisted by advanced Tile - PI	Technological Promoters for Innovation, National Grant	€ 23.081,81

Part VIII – Responsibility for other scientific international and national research projects selected for funding based on competitive calls that provide peer review [Project Manager – Responsible of all the scientific activities of the project; Unit Manager – Responsible of scientific activities of the own unit; Team Member – Involvement in specific scientific activities within the Unit]

Year	Title	Program	Role
2021 - present	Artimation - Transparent ARTificial Intelligence and AutoMATION to Air Traffic Management Systems	H2020 SESAR-RIA, GA894238	Unit Manager
2020 - present	Mindtooth - Wearable device to decode human mental states by neurometrics for a new concept of smart interaction with the surrounding environment	H2020 Fast Track to Innovation (FTI), GA950998	Project Manager
2019-2020	The pleasure and the engage of listening the italian classic of literature: a neuroscientific perspective	Medium and Large Equipment, Sapienza University of Rome, RM11916B5ADDCB0B	Team Member
2019 - present	SAFEMODE - Strengthening synergies between Aviation and maritime in the area of human Factors towards achieving more Efficient and resilient MODE of transportation	H2020-EU.3.4., GA814961	Unit Manager

2019 - present	HOPE - automatic detection and localization of High frequency Oscillation in Paediatric Epilepsy	MSCA-RISE H2020, GA823958	Unit Manager
2019-2020	MusEmotion - Measuring the cerebral and emotional activity during art perception in museums, theaters and shows: the MusEmotion project	Medium and Large Equipment, Sapienza University of Rome, RM1181642BEAA2D4	Team Member
2019 - present	WorkingAge - Smart Working Environments For All Ages	RIA H2020, GA826232	Team Member
2017-2021	SimuSafe - Behavioral Aspects Of Simulator For Safer Transport	RIA H2020, GA723386	Team Member
2016-2018	STRESS - Human Performance neurometricS Toolbox for highly automated Systems deSign	H2020 SESAR-RIA, GA699381	Unit Manager
2016-2018	MOTO - embodied the Remote Tower	H2020 SESAR-RIA, GA699379	Unit Manager
2016-2018	MINIMA - Mitigating Negative Impacts of Monitoring high levels of Automation	H2020 SESAR-RIA, GA699282	Team Member
2015-2018	SmokeFreeBrain - Multidisciplinary tools for improving the efficacy of public prevention measures against smoking	RIA H2020, GA681120	Team Member
2013-2016	Development of techniques for analysis of EEG signals during cognitive tasks of driving or process control	PRIN 2012 WAANZJ	Team Member
2013-2015	NINA - Neurometrics Indicators for ATM	SESAR-RIA, WPE	Unit Manager
2012-2014	HAND - Hybrid system with Advanced user interface for Environmental Domotic control	Finanziaria Laziale di Sviluppo (FILAS)	Team Member
2012	MINDHOME	TECNO.TIB.E.R.I.S (consorzio tecnologie tiburtino per l'eccellenza nella ricerca, l'innovazione e lo sviluppo) Consortium	Team Member
2008-2013	TOBI - Tools for Brain-Computer Interaction (<i>involvement from 2010</i>)	FP7-ICT, GA224631	Team Member
2008-2011	ABC - Augmented BNCI Communication (<i>involvement from 2010</i>)	FP7-ICT, GA287774	Team Member
2008-2011	SM4All - Smart Homes For All. An Embedded Middleware Platform For Pervasive And Immersive Environments For-All (<i>involvement from 2010</i>)	FP7-ICT, GA224332	Team Member

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Part IX – Editorial and reviewing activity

Year	Title	Position
2016 - present	International Journal of Bioelectromagnetism (IJBEM)	Associate Editor
2014 - present	Computational Intelligence and Neuroscience, Hindawi	Editorial Board Member
2019 - present	BrainSciences, MDPI	Editorial Board Member
2021 - present	Special Issue: "Brain Plasticity, Cognitive Training and Mental States Assessment" international journal <i>BrainSciences, MDPI</i>	Guest Editor
2020-2021	Special Issue: "Network Neuroscience: Brain Networks in the Field of Affective, Cognitive and Personality Neuroscience" international journal <i>BrainSciences, MDPI</i>	Guest Editor
2019-2020	Special Issue: "Out of the Lab Employment of Neurophysiological Measures and Sustainability" international journal <i>Sustainability, MDPI</i>	Guest Editor
2018-2019	Special Issue: "neurophysiological Measures for Human Factors Evaluation in Real World Settings" international journal <i>Computational Intelligence and Neuroscience, Hindawi</i>	Guest Editor
2015-2016	Special Issue: "Advances in eye tracking technology: theory, algorithms and applications" international journal <i>Computational Intelligence and Neuroscience, Hindawi</i>	Guest Editor
2011 - present	Reviewing activity on peer-reviewed and impacted journals and conference papers in the fields of bioengineering and neuroscience, as IEEE Transactions on Biomedical Engineering, IEEE Intelligent Systems, Journal of Neural Engineering, PlosOne, Sensors, Frontiers in Human Neuroscience, Ergonomics, Brain Topography, Clinical EEG and neuroscience, Neuroscience & Biobehavioral Reviews, BrainSciences, Computational Intelligence in Neuroscience, IEEE EMBC, H-Workload, GNB conference.	Reviewer of journal and conference papers
2021	Scientific proposals for Cyprus Research and Innovation Foundation (RIF)	Evaluator
2019	GNB awards for the best Master's degree and PhD thesis	Evaluator

Part X – Organization or participation as a speaker at scientific conferences

Year	Event	Role
2021	Brain Products Academy BCI Event 2021: Workshop - Out of the lab Neurometrics assessment by using wearable and reliable EEG technology: the Mindtooth project, <i>Online</i>	Organizer and Speaker - <i>oral presentation</i> of the workshop
2021	43rd Annual International Conference	Speaker - <i>oral presentation</i>

	of the IEEE Engineering in Medicine and Biology Society (EMBC), <i>Online</i> Title: <i>Mental Effort Estimation by Passive BCI: A Cross-Subject Analysis</i>	
2019	Out of the Lab employment of Neurophysiological measures: clinical applications and beyond, <i>Rome, Italy</i> Title: <i>Human-machine interaction assessment by neurophysiological measures employment</i>	Organizer and Speaker - <i>oral presentation</i> of the workshop
2019	3rd International Symposium H-Workload, <i>Rome, Italy</i>	Organizer and Local Chair
2016	BIOSTEC 2016: 9h The International Joint Conference on Biomedical Engineering Systems and Technologies, <i>Rome, Italy</i> Title: <i>Towards the practical use of industrial cognitive neuroscience</i>	Invited Speaker
2015	China-Italy Science, Technology & Innovation Week, <i>Beijing, China</i> Title: <i>The development of brain science in Italy: Brain Computer Interfaces applications</i>	Invited Speaker
2015	37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), <i>Milan, Italy</i> Title: <i>Reliability over time of EEG-based mental workload evaluation during Air Traffic Management (ATM) tasks</i>	Speaker - <i>oral presentation</i>
2014	36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), <i>Chicago, USA</i> Title: <i>Towards a multimodal bioelectrical framework for the online mental workload evaluation</i>	Speaker - <i>oral presentation</i>
2014	Sesar Innovation Days, <i>Madrid, Spain</i> Title: <i>ATM training and workload estimation by neurophysiological signals</i>	Speaker - <i>oral presentation</i>
2014	Diptico IEEE 2014 - Hacia una reorganización geopolítica global: perspectivas militar y sociosanitaria, <i>Murcia, Spain</i> Title: <i>Neurophysiological Studies during training and during Flight</i>	Invited Speaker

	<i>Simulation</i>	
2014	6th International Conference BCI, Graz, Austria Title: <i>Influence of P300 latency jitter over (c)overt attention BCIs</i>	Speaker - poster presentation
2014	Italian Association of Aeronautical and Space Medicine -AIMAS, XXVII National Congress, Siracusa, Italy Title: <i>ATCO: Neurophysiological analysis of the training and of the workload</i>	Speaker - oral presentation
2014	IV congress of the National Group of Bioengineering (GNB), Pavia, Italy Title: <i>Towards a multimodal bioelectrical framework for the online mental workload evaluation</i>	Speaker - poster presentation
2013	Sesar Innovation Days, Stockholm, Sweden Title: <i>NINA: Neurometrics Indicators for ATM</i>	Speaker - oral presentation
2013	Italian Association of Aeronautical and Space Medicine - AIMAS, XXVI National Congress, Vatican City Title: <i>A brain computer interface system for the online evaluation of ATCs' workload</i>	Speaker - oral presentation
2013	4th Workshop of the TOBI Project: Practical Brain-Computer Interfaces for End-Users: Progress and Challenges, Sion, Switzerland Title: <i>Automated assessment of pathologic EMG synergies for BCI-based neuro-rehabilitation after stroke</i>	Speaker - poster presentation
2012	12th IEEE International Conference on Advanced Learning Technologies (ICALT), Rome, Italy Title: <i>ERP approach: what could we learn from?</i>	Speaker - oral presentation
2012	III Congress of the National Group of Bioengineering (GNB), Rome, Italy Title: <i>FES controlled by a hybrid BCI system for neurorehabilitation-driven after stroke</i> Title: <i>On the correlation between Brain Computer Interface performance and chronotype</i>	Speaker - poster presentation
2012	3rd Workshop of the TOBI Project: Bringing BCIS to End-Users: Facing the Challenge, Evaluation, User	Speaker - poster presentation

	Perspectives, User Needs, and Ethical Questions, Wurzburg, Germany Title: <i>Variability of ERPs-based Brain Computer Interface performance across repeated sessions in a day</i>	
2011	5th International Conference BCI, Graz, Austria Title: <i>On the effect of ERPs-based BCI practice on user's performances</i>	Speaker - poster presentation
2011	International Conference on Bio-Inspired Systems and Signal Processing: Biosignal 2011, Rome, Italy Title: <i>A New P300 No Eye-gaze based Interface: GeoSpell.</i>	Speaker - poster presentation
2010	2nd Workshop of the Project TOBI: Translational issues in development BCI: user needs, ethics, and technology transfer, Rome, Italy Title: <i>GeoSpell: an alternative P300 based speller interface towards no eye gaze required</i>	Organizer and Speaker - poster presentation

Part XI – National and international research collaborations

Year	Institution (Coordinator/Director)	Products
2010-present	Neuroelectrical Imaging and Brain Computer Interface Laboratory IRCCS Fondazione Santa Lucia Rome, Italy <u>Dr. Donatella Mattia, Prof. Febo Cincotti</u>	Such collaboration has been established thanks to an official bilateral agreement between the Sapienza University of Rome, and the IRCCS Fondazione Santa Lucia. This contributed to the establishment of a multi-disciplinary team composed by neurologists, psychologists and engineers with the aim to employ bioengineering expertise in the development of Brain-Computer Interface systems for communication & control, and rehabilitation purposes. This collaboration led me to publish several articles and to participate to many research EU projects (i.e. TOBI, ABC, SM4All, HAND). In 2020, I was involved as Investigator of the University unit, with the IRCCS Fondazione Santa Lucia, in a project funded by the National Ministry of Health (GR-2019-12369824), titled “ <i>windows of responsiveness in Minimally Conscious State patients: a neurophysiological study to provide a multimodal-passive Brain-Computer Interface</i> ”.
2014-present	Industrial Neuroscience Laboratory, Sapienza University of Rome, Italy	I joined the laboratory of Prof. Fabio Babiloni in 2014. His research group was working on

	<p>the assessment of human mental and emotional states in operational environments. I had the possibility to apply methodologies developed in the field of BCI for communication & control and rehabilitation to start a research branch in the passive BCI field, i.e. automatically decode mental and emotional states of an operator (e.g. air traffic controller, pilot, car driver), and use them in a closed loop to adapt the behaviour of the interface/system that he/she is interacting with. I had the opportunity to be involved in several national and international projects, and even in the writing of new research proposal, that led me to expand my research network, write many contributions to impacted journals and participate to national and international conferences on bioengineering and neuroscience topics.</p>	
2014 present	<p>ENAC (Ecole Nationale de l'Aviation Civile) Toulouse, France <u>Dr. Jean-Paul Imbert, Prof. Christophe Hurter</u> DeepBlue (human factors company), Rome, Italy <u>Dr. Simone Pozzi</u></p>	<p>This research collaboration has been established thanks to a research project, funded by the EU, Sesar WPE framework: NINA - neurometrics indicators for Atm. Thanks to this collaboration I had the opportunity to validate passive BCI systems for human factors assessment in operational environments (air traffic controllers provided by ENAC), facing with the constraints of the "real-setting" that are often not taken into account by most of the work carried out in literature (laboratory-setting), such as body artifacts coupled to the biosignals and single subject measurements. This collaboration led to the writing of journal papers in BCI field, and of many research proposals, funded within the H2020 program, such as MOTO, STRESS, MINIMA, SAFEMODE (ongoing), and ARTIMATION (ongoing). In the most of these projects I was involved as unit manager for Sapienza University unit.</p>
2013 - 2015	<p>Singapore Institute for Neurotechnology (SINAPSE) Lab, National University of Singapore (NUS) <u>Prof. Nitish V. Thakor</u></p>	<p>International collaboration between the Industrial Neuroscience Laboratory directed by Prof. Babiloni within which I worked and Research Institute directed by Prof. Thakor. The collaboration led me to the execution of experimental protocols in the framework of passive BCI field, and to the drafting and publication of articles in national and international peer reviewed journals and conference papers.</p>

2017 - present	Mälardalen University (MDH), Dep. of Computer Science Prof. Mobyen Uddin Ahmed	Research collaboration established thanks to the participation in the same project consortia, leading to the publication of scientific papers on impacted and peer-reviewed journals, and writing of successful proposals funded within the H2020 program, i.e. SIMUSAFE, WORKINGAGE (ongoing), MINDTOOTH (ongoing). In particular, I was involved in the Mindtooth project as Project Manager for the whole consortia technical activities.
	ITCL Institute of Technology of Castilla y Leon (ITCL) Dr. Maite Cobo Abeytua	
	IBM Research Lab in Haifa, Israel Dr. Lior Limonad	

Part XII – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Article Papers [international]	37	Scopus	2011	2021
Review Papers [international]	2	Scopus	2017	2018
Editorial Papers [international]	2	Scopus	2016	2020
Conference Papers indexed on medline	35	Scopus	2010	2020
Books chapters [scientific]	7 (3 of these represent a full Book)	Scopus	2013	2020
Patent	1	European Patent Office: EP3143933A1	2015	Active

Figure 1: # Citazioni per Anno

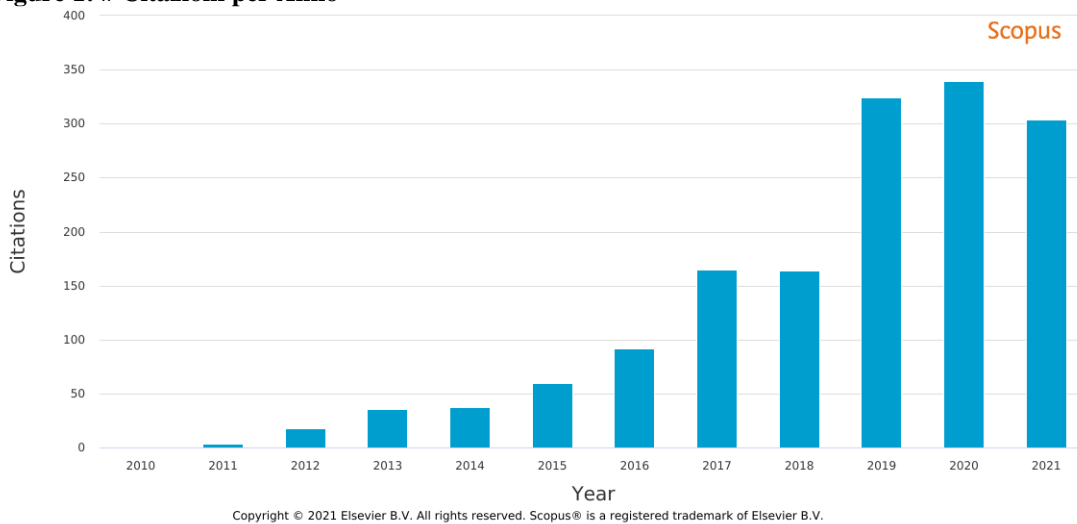
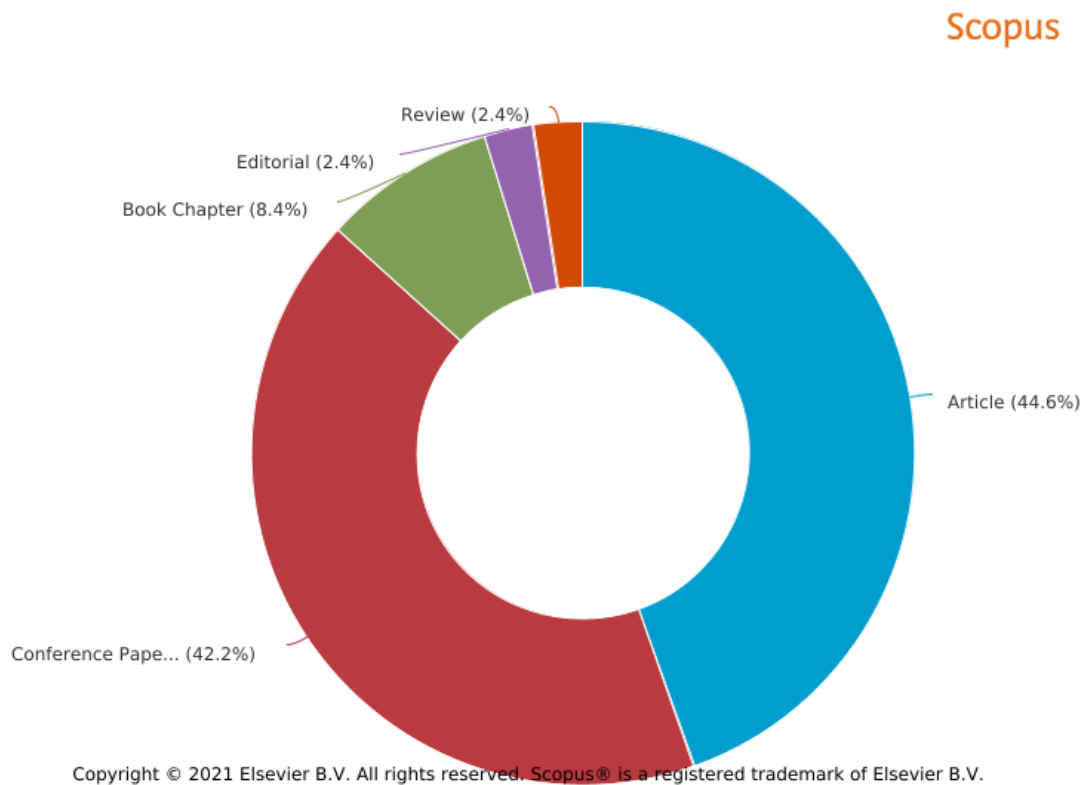


Figure 2: Documents by type



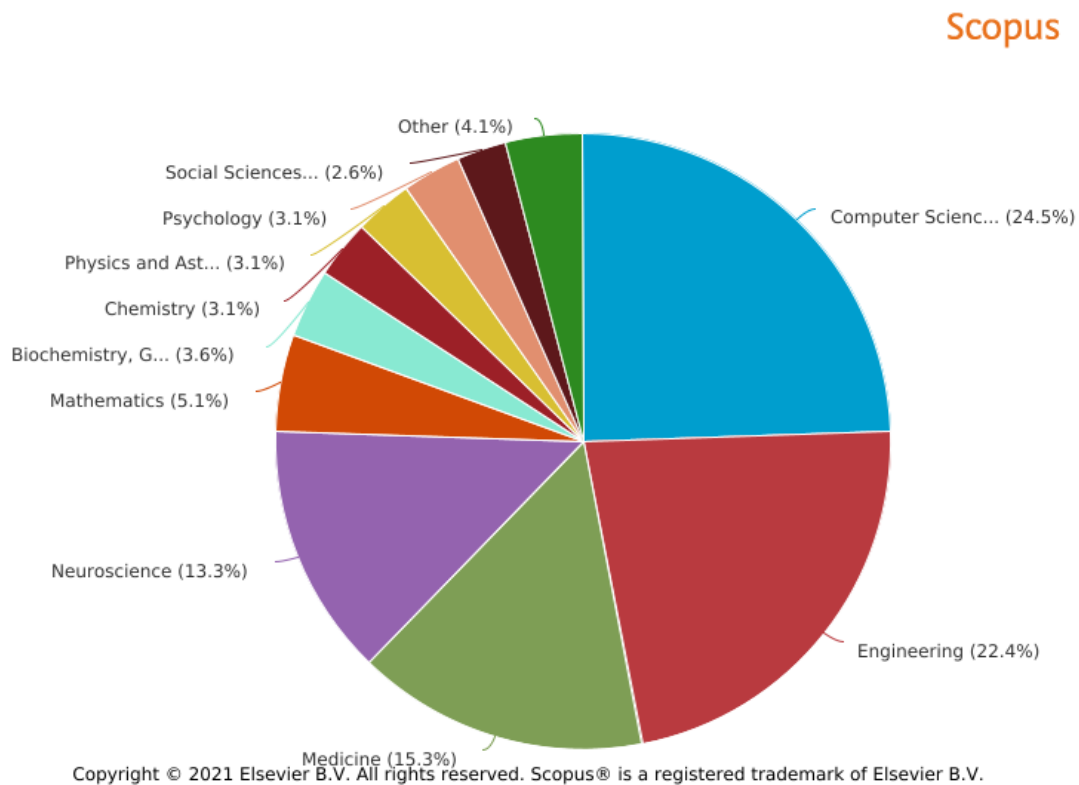
Total Impact factor (related to the specific year of publication)	120.138	WoS
Average Impact factor per Product (related to the specific year of publication)	3.00*	WoS, Scopus
Total Impact factor (2021)	147.993 (WoS)	WoS
Average Impact factor per Product (2021)	3.700*	WoS, Scopus
Total Citations	1545	Scopus
Average Citations per Product	18.614**	Scopus
Hirsch (H) index	27	Scopus
Normalized H index***	2.455	Scopus

*Averaged over 40 Documents present on Journal Citation Reports (JCR) of WoS

**Averaged over 83 Documents in Scopus

***H index divided by the academic seniority (time span from graduation: 2010, 11 years from the graduation).

Figure 3: Documents by subject area



Part XIII – Publications

XIII A – Selected Publications (between 12 and 16 from 1st January 2011)

#	Authors	Title	Reference	Year/link	IF ¹	Citations ²
1	Marucci, M., Di Flumeri, G., Borghini, G., Sciaraffa, N., Scandola, M., Pavone, E.F., Babiloni, F., Betti, V., Aricò, P.	The impact of multisensory integration and perceptual load in virtual reality settings on performance, workload and presence	Scientific Reports	2021	4.379	2
2	Sciaraffa, N., Borghini, G., Di Flumeri, G., Cincotti, F., Babiloni, F., Aricò, P.	Joint analysis of eye blinks and brain activity to investigate attentional demand during a visual search task	Brain Sciences	2021	3.394	1
3	Sciaraffa, N., Klados, M.A., Borghini, G., Di Flumeri, G., Babiloni, F., Aricò, P.	Double-step machine learning based procedure for HFOs detection and classification	Brain Sciences	2020	3.394	2
4	Aricò, P. , Reynal, M., Di Flumeri, G., Borghini, G., Sciaraffa, N., Imbert, J.-P., Hurter, C., Terenzi, M., Ferreira, A., Pozzi, S., Betti, V., Marucci, M., Telea, A.C., Babiloni, F.	How Neurophysiological Measures Can be Used to Enhance the Evaluation of Remote Tower Solutions	Frontiers in Human Neuroscience	2019	3.169	7
5	Aricò, P. , Borghini, G., Di Flumeri, G., Sciaraffa, N., Babiloni, F.	Passive BCI beyond the lab: Current trends and future directions	Physiological Measurement	2018	2.833	74

¹ Impact Factor from WoS, 2020

² Citations from Scopus

6	Aricò, P. , Borghini, G., Di Flumeri, G., Bonelli, S., Golfetti, A., Graziani, I., Pozzi, S., Imbert, J.-P., Granger, G., Benhacene, R., Schaefer, D., Babiloni, F.	Human Factors and Neurophysiological Metrics in Air Traffic Control: A Critical Review	IEEE Reviews in Biomedical Engineering	2017	9.05 ³	43
7	Aricò, P. , Borghini, G., Di Flumeri, G., Sciaraffa, N., Colosimo, A., Babiloni, F.	Passive BCI in operational environments: Insights, recent advances, and future trends	IEEE Transactions on Biomedical Engineering	2017	4.538	66
8	Borghini, G., Aricò, P. , Di Flumeri, G., Sciaraffa, N., Colosimo, A., Herrero, M.-T., Bezerianos, A., Thakor, N.V., Babiloni, F.	A new perspective for the training assessment: Machine learning-based neurometric for augmented user's evaluation	Frontiers in Neuroscience	2017	4.677	22
9	Borghini, G., Aricò, P. , Di Flumeri, G., Cartocci, G., Colosimo, A., Bonelli, S., Golfetti, A., Imbert, J.P., Granger, G., Benhacene, R., Pozzi, S., Babiloni, F.	EEG-Based Cognitive Control Behaviour Assessment: An Ecological study with Professional Air Traffic Controllers	Scientific Reports	2017	4.379	58
10	Aricò, P. , Borghini, G., Di Flumeri, G., Colosimo, A., Bonelli, S., Golfetti, A., Pozzi, S., Imbert, J.-P., Granger, G., Benhacene, R., Babiloni, F.	Adaptive automation triggered by EEG-based mental workload index: A passive brain-computer interface application in realistic air traffic control environment	Frontiers in Human Neuroscience	2016	3.169	91
11	Aricò, P. , Borghini, G., Di Flumeri, G., Colosimo, A., Pozzi, S., Babiloni, F.	A passive brain-computer interface application for the mental workload assessment on professional air traffic controllers during realistic air traffic control tasks	Progress in Brain Research	2016	2.453	57
12	Borghini, G., Aricò, P. , Graziani, I., Salinari, S., Sun, Y., Taya, F., Bezerianos, A., Thakor, N.V., Babiloni, F.	Quantitative Assessment of the Training Improvement in a Motor-Cognitive Task by Using EEG, ECG and EOG Signals	Brain Topography	2016	3.02	50
13	Aricò, P. , Aloise, F., Schettini, F., Salinari, S., Mattia, D., Cincotti, F.	Influence of P300 latency jitter on event related potential-based brain-computer interface performance	Journal of Neural Engineering	2014	5.379	38
14	Aloise, F., Aricò, P. , Schettini, F., Salinari, S., Mattia, D., Cincotti, F.	Asynchronous gaze-independent event-related potential-based brain-computer interface	Artificial Intelligence in Medicine	2013	5.326	28
15	Aloise, F., Aricò, P. , Schettini, F., Riccio, A., Salinari, S., Mattia, D., Babiloni, F., Cincotti, F.	A covert attention P300-based brain-computer interface: Geospell	Ergonomics	2012	2.778	50
16	Aloise, F., Schettini, F., Aricò, P. , Leotta, F., Salinari, S., Mattia, D., Babiloni, F., Cincotti, F.	P300-based brain-computer interface for environmental control: An asynchronous approach	Journal of Neural Engineering	2011	5.379	80

³ Cites / Doc. (2 years) from ScimagoJR, since IF not present on WoS. In 2017 the journal was ranked 6.69

XIII B – All Publications (Scopus)

#	Authors	Title	Reference	Year	Document Type
1	Sciaraffa, N., Borghini, G., Di Flumeri, G., Cincotti, F., Babiloni, F., Aricò, P.	Joint analysis of eye blinks and brain activity to investigate attentional demand during a visual search task	Brain Sciences	2021	Article
2	Marucci, M., Di Flumeri, G., Borghini, G., Sciaraffa, N., Scandola, M., Pavone, E.F., Babiloni, F., Betti, V., Aricò, P.	The impact of multisensory integration and perceptual load in virtual reality settings on performance, workload and presence	Scientific Reports	2021	Article
3	Ronca, V., Giorgi, A., Rossi, D., Di Florio, A., Di Flumeri, G., Aricò, P. , Sciaraffa, N., Vozzi, A., Tamborra, L., Simonetti, I., Borghini, G.	A video-based technique for heart rate and eye blinks rate estimation: A potential solution for telemonitoring and remote healthcare	Sensors	2021	Article
4	Zeng, H., Li, X., Borghini, G., Zhao, Y., Aricò, P. , Di Flumeri, G., Sciaraffa, N., Zakaria, W., Kong, W., Babiloni, F.	An eeg-based transfer learning method for cross-subject fatigue mental state prediction	Sensors	2021	Article
5	Vozzi, A., Ronca, V., Aricò, P. , Borghini, G., Sciaraffa, N., Cherubino, P., Trettel, A., Babiloni, F., Di Flumeri, G.	The sample size matters: To what extent the participant reduction affects the outcomes of a neuroscientific research. a case-study in neuromarketing field	Sensors	2021	Article
6	Giorgi, A., Ronca, V., Vozzi, A., Sciaraffa, N., Di Florio, A., Tamborra, L., Simonetti, I., Aricò, P. , Di Flumeri, G., Rossi, D., Borghini, G.	Wearable technologies for mental workload, stress, and emotional state assessment during working-like tasks: A comparison with laboratory technologies	Sensors	2021	Article
7	Sciaraffa, N., Liu, J., Aricò, P. , Di Flumeri, G., Inguscio, B.M.S., Borghini, G., Babiloni, F.	Multivariate model for cooperation: Bridging social physiological compliance and hyperscanning	Social Cognitive and Affective Neuroscience	2021	Article
8	Sciaraffa, N., Klados, M.A., Borghini, G., Di Flumeri, G., Babiloni, F., Aricò, P.	Double-step machine learning based procedure for HFOs detection and classification	Brain Sciences	2020	Article
9	Islam, M.R., Barua, S., Ahmed, M.U., Begum, S., Aricò, P. , Borghini, G., Flumeri, G.D.	A novel mutual information based feature set for drivers' mental workload evaluation using machine learning	Brain Sciences	2020	Article
10	Sebastiani, M., Di Flumeri, G., Aricò, P. , Sciaraffa, N., Babiloni, F., Borghini, G.	Neurophysiological vigilance characterisation and assessment: Laboratory and realistic validations involving professional air traffic controllers	Brain Sciences	2020	Article
11	Borghini, G., Di Flumeri, G., Aricò, P. , Sciaraffa, N., Bonelli, S., Ragosta, M., Tomasello, P., Drogoul, F., Turhan, U., Acikel, B., Ozan, A., Imbert, J.P., Granger, G., Benhacene, R., Babiloni, F.	A multimodal and signals fusion approach for assessing the impact of stressful events on Air Traffic Controllers	Scientific Reports	2020	Article
12	Cartocci, G., Modica, E., Rossi, D., Inguscio, B.M.S., Aricò, P. , Martinez Levy, A.C., Mancini, M., Cherubino, P., Babiloni, F.	Antismoking Campaigns' Perception and Gender Differences: A Comparison among EEG Indices	Computational Intelligence and Neuroscience	2019	Article
13	Aricò, P. , Reynal, M., Di Flumeri, G., Borghini, G., Sciaraffa, N., Imbert, J.-P., Hurter, C., Terenzi, M., Ferreira, A., Pozzi, S., Betti, V., Marucci, M., Telea, A.C., Babiloni, F.	How Neurophysiological Measures Can be Used to Enhance the Evaluation of Remote Tower Solutions	Frontiers in Human Neuroscience	2019	Article
14	Di Flumeri, G., De Crescenzo, F., Berberian, B., Ohneiser, O., Kramer, J., Aricò, P. , Borghini, G., Babiloni, F., Bagassi, S., Piastra, S.	Brain-Computer Interface-Based Adaptive Automation to Prevent Out-Of-The-Loop Phenomenon in Air Traffic Controllers Dealing With Highly Automated Systems	Frontiers in Human Neuroscience	2019	Article
15	Cartocci, G., Scorpecci, A., Borghini, G., Maglione, A.G., Inguscio, B.M.S., Giannantonio, S., Giorgi, A., Malerba, P., Rossi, D., Modica, E., Aricò, P. , Di Flumeri, G., Marsella,	EEG rhythms lateralization patterns in children with unilateral hearing loss are different from the patterns of normal hearing controls during speech-in-noise listening	Hearing Research	2019	Article

	P., Babiloni, F.				
16	Reynal, M., Imbert, J.-P., Aricò, P. , Toupillier, J., Borghini, G., Hurter, C.	Audio Focus: Interactive spatial sound coupled with haptics to improve sound source location in poor visibility	International Journal of Human Computer Studies	2019	Article
17	Di Flumeri, G., Aricò, P. , Borghini, G., Sciaraffa, N., Di Florio, A., Babiloni, F.	The dry revolution: Evaluation of three different eeg dry electrode types in terms of signal spectral features, mental states classification and usability	Sensors (Switzerland)	2019	Article
18	Borghini, G., Aricò, P. , Di Flumeri, G., Sciaraffa, N., Babiloni, F.	Correlation and similarity between cerebral and non-cerebral electrical activity for user's states assessment	Sensors (Switzerland)	2019	Article
19	Modica, E., Rossi, D., Cartocci, G., Perrotta, D., Di Feo, P., Mancini, M., Aricò, P. , Inguscio, B.M.S., Babiloni, F.	Neurophysiological profile of antismoking campaigns	Computational Intelligence and Neuroscience	2018	Article
20	Modica, E., Cartocci, G., Rossi, D., Martinez Levy, A.C., Cherubino, P., Maglione, A.G., Di Flumeri, G., Mancini, M., Montanari, M., Perrotta, D., Di Feo, P., Vozzi, A., Ronca, V., Aricò, P. , Babiloni, F.	Neurophysiological responses to different product experiences	Computational Intelligence and Neuroscience	2018	Article
21	Di Flumeri, G., Borghini, G., Aricò, P. , Sciaraffa, N., Lanzi, P., Pozzi, S., Vignali, V., Lantieri, C., Bichicchi, A., Simone, A., Babiloni, F.	EEG-based mental workload neurometric to evaluate the impact of different traffic and road conditions in real driving settings	Frontiers in Human Neuroscience	2018	Article
22	Sciaraffa, N., Borghini, G., Aricò, P. , Di Flumeri, G., Colosimo, A., Bezerianos, A., Thakor, N.V., Babiloni, F.	Brain interaction during cooperation: Evaluating local properties of multiple-brain network	Brain Sciences	2017	Article
23	Borghini, G., Aricò, P. , Di Flumeri, G., Sciaraffa, N., Colosimo, A., Herrero, M.-T., Bezerianos, A., Thakor, N.V., Babiloni, F.	A new perspective for the training assessment: Machine learning-based neurometric for augmented user's evaluation	Frontiers in Neuroscience	2017	Article
24	Aricò, P. , Borghini, G., Di Flumeri, G., Sciaraffa, N., Colosimo, A., Babiloni, F.	Passive BCI in operational environments: Insights, recent advances, and future trends	IEEE Transactions on Biomedical Engineering	2017	Article
25	Borghini, G., Aricò, P. , Di Flumeri, G., Cartocci, G., Colosimo, A., Bonelli, S., Golfetti, A., Imbert, J.P., Granger, G., Benhacene, R., Pozzi, S., Babiloni, F.	EEG-Based Cognitive Control Behaviour Assessment: An Ecological study with Professional Air Traffic Controllers	Scientific Reports	2017	Article
26	Borghini, G., Aricò, P. , Graziani, I., Salinari, S., Sun, Y., Taya, F., Bezerianos, A., Thakor, N.V., Babiloni, F.	Quantitative Assessment of the Training Improvement in a Motor-Cognitive Task by Using EEG, ECG and EOG Signals	Brain Topography	2016	Article
27	Aricò, P. , Borghini, G., Di Flumeri, G., Colosimo, A., Bonelli, S., Golfetti, A., Pozzi, S., Imbert, J.-P., Granger, G., Benhacene, R., Babiloni, F.	Adaptive automation triggered by EEG-based mental workload index: A passive brain-computer interface application in realistic air traffic control environment	Frontiers in Human Neuroscience	2016	Article
28	Vecchiato, G., Borghini, G., Aricò, P. , Graziani, I., Maglione, A.G., Cherubino, P., Babiloni, F.	Investigation of the effect of EEG-BCI on the simultaneous execution of flight simulation and attentional tasks	Medical and Biological Engineering and Computing	2016	Article
29	Cartocci, G., Maglione, A.G., Rossi, D., Modica, E., Malerba, P., Borghini, G., Flumeri, G.D., Aricò, P. , Babiloni, F.	Applications in cochlear implants and avionic: Examples of how neurometric measurements of the human perception could help the choice of appropriate human-machine interaction solutions beyond behavioral data	PsychNology Journal	2016	Article
30	Riccio, A., Holz, E.M., Aricò, P. , Leotta, F., Aloise, F., Desideri, L., Rimondini, M., Kübler, A., Mattia, D., Cincotti, F.	Hybrid P300-based brain-computer interface to improve usability for people with severe motor disability: Electromyographic signals for error correction during a spelling task	Archives of Physical Medicine and Rehabilitation	2015	Article

31	Aricò, P., Aloise, F., Schettini, F., Salinari, S., Mattia, D., Cincotti, F.	Influence of P300 latency jitter on event related potential-based brain-computer interface performance	Journal of Neural Engineering	2014	Article
32	Schettini, F., Aloise, F., Aricò, P., Salinari, S., Mattia, D., Cincotti, F.	Self-calibration algorithm in an asynchronous P300-based brain-computer interface	Journal of Neural Engineering	2014	Article
33	Aloise, F., Aricò, P., Schettini, F., Salinari, S., Mattia, D., Cincotti, F.	Asynchronous gaze-independent event-related potential-based brain-computer interface	Artificial Intelligence in Medicine	2013	Article
34	Aloise, F., Aricò, P., Schettini, F., Riccio, A., Salinari, S., Mattia, D., Babiloni, F., Cincotti, F.	A covert attention P300-based brain-computer interface: Geospell	Ergonomics	2012	Article
35	Aloise, F., Schettini, F., Aricò, P., Salinari, S., Babiloni, F., Cincotti, F.	A comparison of classification techniques for a gaze-independent P300-based brain-computer interface	Journal of Neural Engineering	2012	Article
36	Aloise, F., Schettini, F., Aricò, P., Salinari, S., Guger, C., Rinsma, J., Aiello, M., Mattia, D., Cincotti, F.	Asynchronous P300-based brain-computer interface to control a virtual environment: Initial tests on end users	Clinical EEG and Neuroscience	2011	Article
37	Aloise, F., Schettini, F., Aricò, P., Leotta, F., Salinari, S., Mattia, D., Babiloni, F., Cincotti, F.	P300-based brain-computer interface for environmental control: An asynchronous approach	Journal of Neural Engineering	2011	Article
38	Aricò, P., Sciaraffa, N., Babiloni, F.	Brain-computer interfaces: Toward a daily life employment	Brain Sciences	2020	Editorial
39	Fu, H., Wei, Y., Camastra, F., Aricò, P., Sheng, H.	Advances in Eye Tracking Technology: Theory, Algorithms, and Applications	Computational Intelligence and Neuroscience	2016	Editorial
40	Aricò, P., Borghini, G., Di Flumeri, G., Sciaraffa, N., Babiloni, F.	Passive BCI beyond the lab: Current trends and future directions	Physiological Measurement	2018	Review
41	Aricò, P., Borghini, G., Di Flumeri, G., Bonelli, S., Golfetti, A., Graziani, I., Pozzi, S., Imbert, J.-P., Granger, G., Benhacene, R., Schaefer, D., Babiloni, F.	Human Factors and Neurophysiological Metrics in Air Traffic Control: A Critical Review	IEEE Reviews in Biomedical Engineering	2017	Review
42	Borghini G., Ronca V., Vozzi A., Aricò P., Di Flumeri G., Babiloni F.	Monitoring performance of professional and occupational operators	Handbook of Clinical Neurology	2020	Book Chapter
43	Di Flumeri G., Borghini G., Aricò P., Sciaraffa N., Lanzi P., Pozzi S., Vignali V., Lantieri C., Bichicchi A., Simone A., Babiloni F.	EEG-based mental workload assessment during real driving: A taxonomic tool for neuroergonomics in highly automated environments	Neuroergonomics: The Brain at Work and in Everyday Life	2018	Book Chapter
44	Borghini G., Aricò P., Di Flumeri G., Babiloni F.	Mental states in aviation (Applications)	Biosystems and Biorobotics	2017	Book Chapter
45	Borghini G., Aricò P., Di Flumeri G., Babiloni F.	Mental states in aviation (General conclusions)	Biosystems and Biorobotics	2017	Book Chapter
46	Borghini G., Aricò P., Di Flumeri G., Babiloni F.	Mental states in aviation (Neurophysiological signals processing)	Biosystems and Biorobotics	2017	Book Chapter
47	Aricò, P., Borghini, G., Di Flumeri, G., Colosimo, A., Pozzi, S., Babiloni, F.	A passive brain-computer interface application for the mental workload assessment on professional air traffic controllers during realistic air traffic control tasks	Progress in Brain Research	2016	Book Chapter
48	Mattia D., Pichiorri F., Aricò P., Aloise F., Cincotti F.	Hybrid brain-computer interaction for functional motor recovery after stroke	Biosystems and Biorobotics	2013	Book Chapter
49	Ronca V., Rossi D., Di Florio A., Di Flumeri G., Aricò P., Sciaraffa N., Vozzi A., Babiloni F., Borghini G.	Contactless Physiological Assessment of Mental Workload During Teleworking-like Task	Communications in Computer and Information Science	2020	Conference Paper
50	Reynal M., Aricò P., Imbert J.-P., Hurter C., Borghini G., Di Flumeri G., Sciaraffa N., Di Florio A., Terenzi M., Ferreira A., Pozzi S., Betti V., Marucci M., Babiloni F.	Involving Hearing, Haptics and Kinesthetics into Non-visual Interaction Concepts for an Augmented Remote Tower Environment	Communications in Computer and Information Science	2020	Conference Paper
51	Borghini G., Aricò P., Di Flumeri G., Sciaraffa N., Ronca V., Vozzi A., Babiloni F.	Assessment of Athletes' Attitude: Physiological Evaluation via Wearable Sensors during Grappling Competitions	Proceedings of the Annual International Conference of the IEEE Engineering	2020	Conference Paper

			in Medicine and Biology Society, EMBS		
52	Borghini G., Bandini A., Orlandi S., Di Flumeri G., Aricò P. , Sciaraffa N., Ronca V., Bonelli S., Ragosta M., Tomasello P., Turhan U., Acikel B., Ozan A., Imbert J.P., Granger G., Benhacene R., Drogoul F., Babiloni F.	Stress Assessment by Combining Neurophysiological Signals and Radio Communications of Air Traffic Controllers	Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS	2020	Conference Paper
53	Acerra E., Pazzini M., Ghasemi N., Vignali V., Lantieri C., Simone A., Di Flumeri G., Aricò P. , Borghini G., Sciaraffa N., Lanzi P., Babiloni F.	EEG-Based Mental Workload and Perception-Reaction Time of the Drivers While Using Adaptive Cruise Control	Communications in Computer and Information Science	2019	Conference Paper
54	Di Flumeri G., Aricò P., Borghini G., Sciaraffa N., Ronca V., Vozzi A., Storti S.F., Menegaz G., Fiorini P., Babiloni F.	EEG-Based Workload Index as a Taxonomic Tool to Evaluate the Similarity of Different Robot-Assisted Surgery Systems	Communications in Computer and Information Science	2019	Conference Paper
55	Sciaraffa N., Aricò P. , Borghini G., Flumeri G.D., Florio A.D., Babiloni F.	On the Use of Machine Learning for EEG-Based Workload Assessment: Algorithms Comparison in a Realistic Task	Communications in Computer and Information Science	2019	Conference Paper
56	Sciaraffa N., Borghini G., Aricò P. , Di Flumeri G., Bonelli S., Drogoul F., Vozzi A., Ronca V., Bezerianos A., Thakor N.V., Babiloni F.	Toward a cooperation index based on EEG-workload causality: Preliminary findings on aerospace-like tasks	Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS	2019	Conference Paper
57	Reynal M., Aricò P. , Imbert J.-P., Hurter C., Borghini G., Flumeri G.D., Sciaraffa N., Florio A.D., Terenzi M., Ferreira A., Pozzi S., Betti V., Marucci M., Babiloni F.	Investigating multimodal augmentations contribution to remote control tower contexts for air traffic management	VISIGRAPP 2019 - Proceedings of the 14th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications	2019	Conference Paper
58	Aricò P. , Reynal M., Imbert J.-P., Hurter C., Borghini G., Di Flumeri G., Sciaraffa N., Di Florio A., Terenzi M., Ferreira A., Pozzi S., Betti V., Marucci M., Pavone E., Telea A.C., Babiloni F.	Human-Machine Interaction Assessment by Neurophysiological Measures: A Study on Professional Air Traffic Controllers	Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS	2018	Conference Paper
59	Sciaraffa N., Borghini G., Aricò P. , Di Flumeri G., Toppi J., Colosimo A., Bezerianos A., Thakor N.V., Babiloni F.	How the workload impacts on cognitive cooperation: A pilot study	Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS	2017	Conference Paper
60	Di Flumeri G., Aricò P. , Borghini G., Sciaraffa N., Maglione A.G., Rossi D., Modica E., Trettel A., Babiloni F., Colosimo A., Herrero M.T.	EEG-based Approach-Withdrawal index for the pleasantness evaluation during taste experience in realistic settings	Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS	2017	Conference Paper
61	Borghini G., Ragosta M., Aricò P. , Bonelli S., Di Flumeri G., Sciaraffa	Development of neurometrics for selective attention evaluation in ATM	SESAR Innovation Days	2017	Conference Paper

	N., Tomasello P., Mancini D., Colosimo A., Babiloni F.				
62	Di Flumeri G., Aricò P. , Borghini G., Colosimo A., Babiloni F.	A new regression-based method for the eye blinks artifacts correction in the EEG signal, without using any EOG channel	Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS	2016	Conference Paper
63	Borghini G., Aricò P., Di Flumeri G., Colosimo A., Storti S.F., Menegaz G., Fiorini P., Babiloni F.	Neurophysiological measures for users' training objective assessment during simulated robot-assisted laparoscopic surgery	Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS	2016	Conference Paper
64	Taya F., Sun Y., Borghini G., Aricò P. , Babiloni F., Bezerianos A., Thakor N.V.	Training-induced changes in information transfer efficiency of the brain network: A functional connectome approach	International IEEE/EMBS Conference on Neural Engineering, NER	2015	Conference Paper
65	di Flumeri G., Borghini G., Aricò P. , Colosimo A., Pozzi S., Bonelli S., Golfetti A., Kong W., Babiloni F.	On the Use of Cognitive Neurometric Indexes in Aeronautic and Air Traffic Management Environments	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)	2015	Conference Paper
66	Cartocci G., Maglione A.G., Vecchiato G., Di Flumeri G., Colosimo A., Scorpecci A., Marsella P., Giannantonio S., Malerba P., Borghini G., Aricò P. , Babiloni F.	Mental workload estimations in unilateral deafened children	Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS	2015	Conference Paper
67	Aricò P. , Borghini G., Di Flumeri G., Colosimo A., Graziani I., Imbert J.-P., Granger G., Benhacene R., Terenzi M., Pozzi S., Babiloni F.	Reliability over time of EEG-based mental workload evaluation during Air Traffic Management (ATM) tasks	Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS	2015	Conference Paper
68	Bezerianos A., Sun Y., Chen Y., Woong K.F., Taya F., Aricò P. , Borghini G., Babiloni F., Thakor N.	Cooperation driven coherence: Brains working hard together	Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS	2015	Conference Paper
69	Borghini G., Aricò P. , Di Flumeri G., Salinari S., Colosimo A., Bonelli S., Napoletano L., Ferreira A., Babiloni F.	Avionic technology testing by using a cognitive neurometric index: A study with professional helicopter pilots	Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS	2015	Conference Paper
70	Schettini F., Risetti M., Aricò P. , Formisano R., Babiloni F., Mattia D., Cincotti F.	P300 latency Jitter occurrence in patients with disorders of consciousness: Toward a better design for Brain Computer Interface applications	Proceedings of the Annual International Conference of the	2015	Conference Paper

			IEEE Engineering in Medicine and Biology Society, EMBS		
71	Borghini G., Aricò P. , Di Flumeri G., Graziani I., Colosimo A., Salinari S., Babiloni F., Imbert J.-P., Granger G., Benhacene R., Golfetti A., Bonelli S., Pozzi S.	Skill, rule and knowledge-based behaviors detection during realistic ATM Simulations by Means of ATCOs' Brain Activity	SESAR Innovation Days	2015	Conference Paper
72	Maglione A., Borghini G., Aricò P. , Borgia F., Graziani I., Colosimo A., Kong W., Vecchiato G., Babiloni F.	Evaluation of the workload and drowsiness during car driving by using high resolution EEG activity and neurophysiologic indices	2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC 2014	2014	Conference Paper
73	Borghini G., Aricò P. , Ferri F., Graziani I., Pozzi S., Napoletano L., Imbert J.P., Granger G., Benhacene R., Babiloni F.	A neurophysiological training evaluation metric for Air Traffic Management	2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC 2014	2014	Conference Paper
74	Aricò P. , Borghini G., Graziani I., Taya F., Sun Y., Bezerianos A., Thakor N.V., Cincotti F., Babiloni F.	Towards a multimodal bioelectrical framework for the online mental workload evaluation	2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC 2014	2014	Conference Paper
75	Babiloni F., Cherubino P., Graziani I., Trettel A., Bagordo G.M., Cundari C., Borghini G., Aricò P. , Maglione A.G., Vecchiato G.	The great beauty: A neuroaesthetic study by neuroelectric imaging during the observation of the real Michelangelo's Moses sculpture	2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC 2014	2014	Conference Paper
76	Borghini G., Aricò P., Graziani I., Salinari S., Babiloni F., Imbert J.P., Granger G., Benhacene R., Napoletano L., Terenzi M., Pozzi S.	Analysis of neurophysiological signals for the training and mental workload assessment of ATCOs	SIDs 2014 - Proceedings of the SESAR Innovation Days	2014	Conference Paper
77	Borghini G., Aricò P. , Astolfi L., Toppi J., Cincotti F., Mattia D., Cherubino P., Vecchiato G., Maglione A.G., Graziani I., Babiloni F.	Frontal EEG theta changes assess the training improvements of novices in flight simulation tasks	Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS	2013	Conference Paper
78	Aricò P. , Aloise F., Giovannella C.	ERP approach: What could we learn from?	Proceedings of the 12th IEEE International Conference on Advanced Learning Technologies, ICALT 2012	2012	Conference Paper
79	Schettini F., Aloise F., Aricò P. , Salinari S., Mattia D., Cincotti F.	Control or no-control? Reducing the gap between brain-computer interface and classical input devices	Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS	2012	Conference Paper
80	Cincotti F., Pichiorri F., Aricò P. , Aloise F., Leotta F., De Vico Fallani	EEG-based brain-computer interface to support post-stroke motor rehabilitation	Proceedings of the Annual	2012	Conference Paper

	F., Millan J.D.R., Molinari M., Mattia D.	of the upper limb	International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS		
81	Aloise F., Aricò P. , Schettini F., Riccio A., Riseti M., Salinari S., Mattia D., Babiloni F., Cincotti F.	A new P300 no eye-gaze based interface: Geospell	BIOSIGNALS 2011 - Proceedings of the International Conference on Bio-Inspired Systems and Signal Processing	2011	Conference Paper
82	Aloise F., Schettini F., Aricò P. , Leotta F., Salinari S., Mattia D., Babiloni F., Cincotti F.	Toward domotic appliances control through a self-paced P300-based BCI	BIOSIGNALS 2011 - Proceedings of the International Conference on Bio-Inspired Systems and Signal Processing	2011	Conference Paper
83	Aloise F., Schettini F., Aricò P. , Bianchi L., Riccio A., Mecella M., Babiloni F., Mattia D., Cincotti F.	Advanced brain computer interface for communication and control	Proceedings of the Workshop on Advanced Visual Interfaces AVI	2010	Conference Paper

XIII C – Other/In press Publications (Google Scholar)

#	Authors	Title	Reference	Year	Document Type
84	Zhao, Y; Dai, G; Borghini, G; Zhang, J; Li, X; Zhang, Z; Aricò, P ; Di Flumeri, G; Babiloni, F; Zeng, H;	Label-based Alignment Multi-Source Domain Adaptation for Cross-subject EEG Fatigue Mental State Evaluation	Frontiers in Human Neuroscience	In Press	Article
85	Ohneiser, O; De Crescenzo, F; Di Flumeri, G; Kraemer, J; Berberian, B; Bagassi, S; Sciaraffa, N; Aricò, P ; Borghini, G; Babiloni, F;	Experimental simulation set-up for validating out-of-the-loop mitigation when monitoring high levels of automation in air traffic control	International Journal of Aerospace and Mechanical Engineering	2018	Article
86	Modica, E; Rossi, D; Cherubino, P; Trettel, A; Picconi, D; Maglione, AG; Bagordo, GM; Borghini, G; Aricò, P ; Colosimo, A; Vecchiato, G; Babiloni, F; Babiloni, F;	Cerebral perception and appreciation of real paintings and sculptures by neuroelectric imaging	International Journal of Bioelectromagnetism	2016	Article
87	Aricò, P ; Borghini, G; Graziani, I; Imbert, JP; Granger, G; Benhacene, R; Pozzi, S; Napoletano, L; Di Flumeri, G; Colosimo, A;	Air-traffic-controllers (ATCO): neurophysiological analysis of training and workload	Ital. J. Aerosp. Med	2015	Article
88	Aricò, P ; Borghini, G; Graziani, I; Bianchini, F; Cincotti, F; Babiloni, F;	A brain computer interface system for the online evaluation of ATCs' workload	Ital. J. Aerosp. Med	2013	Article
89	Aloise, F; Aricò, P ; Schettini, F; Cincotti, F;	Can the P300-based BCI training affect the ERPs?	International Journal of Bioelectromagnetism	2011	Article
90	Aricò, P ; Aloise, F; Schettini, F; Cincotti, F;	GeoSpell: an alternative P300-based speller interface towards no eye gaze required	International Journal of Bioelectromagnetism	2011	Article
91	Schettini, F; Aloise, F; Aricò, P ; Cincotti, F;	Improving Asynchronous Control for P300-based BCI: towards a completely autoadaptive system	International Journal of Bioelectromagnetism	2011	Article
92	Sciaraffa, N; Aricò, P ; Borghini, G; Di Flumeri, G; Di Florio, A; Babiloni, F;	The evolution of passive brain-computer interfaces: enhancing the human-machine interaction	Neurotechnology: Methods, advances and applications	2020	Conference Paper
93	De Crescenzo, F; Di Flumeri, G; Ohneiser, O; Kraemer, J; Berberian, B; Bagassi, S; Sciaraffa, N; Aricò, P ; Borghini, G; Babiloni, F;	Preliminary findings on how to mitigate negative impacts of monitoring high levels of automation	SESAR Innovation Days 2017	2017	Conference Paper

94	Maglione, A; Cartocci, G; Rossi, D; Modica, E; Malerba, P; Borghini, G; Aricò, P ; Di Flumeri, G; Babiloni, F;	Cochlear implant features and listening effort induction: measurement of the mental workload experienced during a word in noise recognition task	SAN2016 Meeting, Corfu, Greece	2016	Conference Paper
95	Schettini, F; Aloise, F; Aricò, P ; Taborri, J; Salinari, S; Mattia, D; Cincotti, F;	Asynchronous Control for a gaze independent P300 based BCI	3rd Workshop of the TOBI Project: Bringing BCIs to End-Users: Facing the Challenge, Evaluation, User Perspectives, User Needs, and Ethical Questions. Würzburg, Germany	2013	Conference Paper
96	Aricò, P ; Aloise, F; Pichiorri, F; Morone, G; Tamburella, F; Salinari, S; Molinari, M; Mattia, D; Cincotti, F;	Automated assessment of pathologic EMG synergies for BCI-based neuro-rehabilitation after stroke	4th Workshop of the TOBI Project: Practical Brain-Computer Interfaces for End-Users: Progress and Challenges. Sion, Switzerland	2013	Conference Paper
97	Aricò, P ; Aloise, F; Schettini, F; Salinari, S; Mattia, D; Cincotti, F;	Evaluation of the latency jitter of P300 evoked potentials during (c) overt attention BCI	4th Workshop of the TOBI Project: Practical Brain-Computer Interfaces for End-Users: Progress and Challenges. Sion, Switzerland	2013	Conference Paper
98	Holz, E; Riccio, A; Reichert, J; Leotta, F; Aricò, P ; Cincotti, F; Mattia, D; Kübler, A;	Hybrid-P300 BCI: Usability testing by severely motor-restricted end-users	4th Workshop of the TOBI Project: Practical Brain-Computer Interfaces for End-Users: Progress and Challenges. Sion, Switzerland	2013	Conference Paper
99	Pichiorri, F; Aricò, P ; Leotta, F; Aloise, F; Cincotti, F; Secci, M; Petti, M; Mattia, D;	Neurorehabilitation-driven design of hybrid BCI-controlled FES for motor recovery after stroke	3rd Workshop of the TOBI Project: Bringing BCIs to End-Users: Facing the Challenge, Evaluation, User Perspectives, User Needs, and Ethical Questions. Würzburg, Germany	2013	Conference Paper
100	Borghini, G; Aricò, P ; Babiloni, F; Granger, G; Imbert, JP; Benhacene, R; Napoletano, L; Pozzi, S;	NINA: Neurometrics Indicators for ATM	SID 2013, 3rd SESAR Innovation Days	2013	Conference Paper
101	Daly, Ian; Aloise, Fabio; Aricò, P ; Belda, Juanma; Billinger, Martin; Bolinger, E; Cincotti, F; Hettich, D; Iosa, Marco; Laparra-Hernández, José;	Rapid prototyping for hBCI users with Cerebral palsy	Proceedings of the Fifth International Brain-Computer Interface Meeting: Defining the Future	2013	Conference Paper
102	Schettini, F; Aloise, F; Aricò, P ; Salinari, S; Di Mattia, D; Cincotti, F;	Self-calibration in an asynchronous P300-based BCI	Proc. Fifth Int. BCI Meeting, June	2013	Conference Paper
103	Aricò, P ; Aloise, F; Pichiorri, F; Leotta, F; Serenella, S; Mattia, D; Cincotti, F;	FES controlled by a hybrid BCI system for neurorehabilitation-driven after stroke	GNB2012, June 26th-29th	2012	Conference Paper
104	Schettini, F; Aloise, F; Aricò, P ; Salinari, S; Mattia, D; Cincotti, F;	Improving Communication Efficiency for gaze independent P300 based Brain Computer Interface	GNB2012, June 26th-29th	2012	Conference Paper
105	Aricò, P ; Aloise, F; Schettini, F; Salinari, S; Mattia, D; Cincotti, F;	On the correlation between Brain Computer Interface performance and	GNB2012, June 26th-29th	2012	Conference Paper

		chronotype			
106	Aricò, P; Aloise, F; Schettini, F; Soragnese, V; Salinari, S; Mattia, D; Cincotti, F;	Variability of ERPs-based Brain Computer Interface performance across repeated sessions in a day	3rd Workshop of the TOBI Project: Bringing BCIs to End-Users: Facing the Challenge, Evaluation, User Perspectives, User Needs, and Ethical Questions. Würzburg, Germany Mar 20th-22th	2012	Conference Paper
107	Schettini, F; Aloise, F; Aricò P; Cincotti F;	Comparing efficiency for Synchronous and Asynchronous P300-based BCIs	5th International BCI Conference, Graz, Austria	2011	Conference Paper
108	Aricò, P; Aloise, F; Schettini, F; Salinari, S; Santostasi, S; Mattia, D; Cincotti, F;	On the Effect of ERPs-Based BCI Practice on User's Performances	5th International BCI Conference, Graz, Austria	2011	Conference Paper

XIII D – Patent

#	Authors	Title	Reference	Year	Number
109	Aricò P; Borghini G; Di Flumeri G, Babiloni F.	Method for estimating a mental state, in particular a workload, and related apparatus	European Patent Office	2015	EP3143933A1