

SC Oculistica, IRCCS Burlo Garofolo
&
Bioengineering Research Group (BioingTS)
Dipartimento di Ingegneria e Architettura
Università degli studi di Trieste

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Curriculum Vitae of

ALEKSANDAR MILADINOVIĆ

Education

- Nov.2017– Apr.2021 **Doctorate in Industrial and Information Engineering (cum laude)**, SSD: *Electronic and Informatics Bioengineering (ING-INF/06)*, University of Trieste, Trieste, Italy.
Thesis: Advanced MI-BCI procedures for neurorehabilitation of PD's and post-stroke patients
- Oct.2015– Oct.2017 **Master of Science degree in Cognitive Science (MEi:Cogsci)**, University of Vienna, Vienna, Pass with distinction, Grade: 1.15/4.00 (1.00 max; 4.00 min) .
Disciplines: Artificial Intelligence / Cognitive Neuroscience / Study of Mind
- Oct.2008– Jul.2012 **Graduate degree in Electrical Engineering and Computer Technology**, (Graduated with Distinction), Belgrade, Serbia, Grade: 9.48/10.00 (10.00 max; 6.00 min).
Signal Processing, Information Theory and Coding, Computer Networks, Software Development

External Collaboration

- CASSIA **Cloud Assisted for Health and Safety**, (POR FESR 2014-2020 FVG), BioingTS, University of Trieste, BioingTS.units.it/CASSIA.
- ECRES **Exercise Carbohydrate Requirement Estimating Software**, BioingTS, University of Trieste / University of Udine, BioingTS.units.it/ECRES.
- MEMORI-net **Mental and Motor Rehabilitation Network of stroke**, Cross-border Italy-Slovenia project, MEMORInet.eu.

Research Projects

- FAMOUS **Unusual sequences detection in very large video collections**, Faculty for Computer Science, University of Vienna, <https://mis.cs.univie.ac.at/research/projects/project/30> .
- CogMAS **Cognitive Multi-Agent System Supporting Marketing Strategies of Environmental-Friendly Energy Products**, Simulation of Mental Apparatus (SiMA) group, Vienna University of Technology, <https://sima.ict.tuwien.ac.at/projects/cogmas/>.
- KORE **Cognitive Optimization of Control Strategies for Increasing Energy-efficiency in Buildings**, Simulation of Mental Apparatus (SiMA) group, Vienna University of Technology, <https://sima.ict.tuwien.ac.at/projects/kore/>.

Work History

- Jan.2021 - **Senior Research Fellow - Post.Doc**, *SC Oculistica, IRCCS Burlo Garofolo*, Trieste, Italy, present
Research project: A diagnostic case-control study to develop an objective test based on ocular following responses (OFRs) measurement to assess stereoacuity in infants and children.
- Nov.2017 - **European Social Fund Doctoral Scholarship Beneficiary**, *Bioengineering Group Trieste (BioingTS), Department of Engineering and Architecture, University of Trieste*, Trieste, Italy, Dec.2020
<http://bioingts.units.it/miladinovic>
BCI, EEG, Biomedical Signal Processing and Software Development
- Nov. 2014- **Research/Teaching Assistant**, (*fixed-term contract, full-time*) *Simulation of Mental Apparatus (SiMA), Institute for Computer Technology, Vienna University of Technology*, Vienna, Austria, Nov.2017
<https://energyit.ict.tuwien.ac.at/team-en/alumni/>
Research: Artificial General Intelligence, development of a functional model of the human cognitive architecture by using a top-down design approach (see CogMAS and KORE projects)
Teaching: 384.139 Selected Topics - Computer Systems (field of Artificial Intelligence)
- May 2013- **Research Assistant**, (*fixed-term contract 30h/week*) *Faculty for Computer Science, University of Vienna*, Vienna, Dec.2013
Video Processing and Automatic Unusual Video Sequence Detection employing Machine Learning Approaches (see FAMOUS project)
- Feb 2012- **Data Collection Associate**, (*fixed-term contract 20h/week*) *Microsoft Development Center Serbia (MDCS), Optical Recognition Team (OCR)*, Belgrade, Serbia, Apr.2012
Responsible for making test sets and evaluation of collections.
- Oct 2011- **Teaching Assistant**, (*fixed-term contract 10h/week*) *Faculty for Computer Engineering (RAF)*, Belgrade, Serbia, Oct.2012
Contributing to the delivery of teaching and tutorials and providing personal academic support for courses "Coding and Information Theory" and "Data Compression".

Awards

- UniTS PhD Top Story**, *Novel Brain-Computer Interface based procedures for motor neurorehabilitation in post-Stroke patients*, Awarded by University of Trieste, Trieste.
October 2020
- IFBME Best Paper Award**, *Slow Cortical Potential BCI Classification Using Sparse Variational Bayesian Logistic Regression with Automatic Relevance Determination*, at Mediterranean Conference on Medical and Biological Engineering and Computing, Coimbra, Portugal.
September 2019
- Best work in the category of Development of innovative devices**, *A Mobile App for Prevention of Exercise-induced hypoglycemia in Type 1 diabetic patients*, at 3rd International Congress of Clinical Engineering and Health Technology Management III ICEHTMC, Rome.
October 2019

Membership

- GNB **Founder member of Italian National Bioengineering Group.**

- IFMBE **Member of International Federation of Medical and Biological Engineering.**
- KES **Silver Member of Knowledge-Based and Intelligent Information and Engineering Systems (Society: Innovation in Medicine and Healthcare).**
- EURASIP **Member of European Association for Signal Processing.**

Languages

Serbian Native | English Fluent | Italian Fluent

Publications

- [1] Aleksandar Miladinović, Miloš Ajčević, Joanna Jarmolowska, Uros Marusic, Marco Colussi, Giulia Silveri, Piero Paolo Battaglini, and Agostino Accardo. Effect of power feature covariance shift on bci spatial-filtering techniques: A comparative study. *Computer Methods and Programs in Biomedicine*, 198, 105808, 2020.
- [2] Aleksandar Miladinović, Miloš Ajčević, Joanna Jarmolowska, Uros Marusic, Giulia Silveri, Piero Paolo Battaglini, and Agostino Accardo. Performance of eeg motor-imagery based spatial filtering methods: A bci study on stroke patients. *Procedia Computer Science*, 176:2840–2848, 2020.
- [3] Miloš Ajčević, Giovanni Furlanis, Alex Buoite Stella, Tommaso Cillotto, Paola Caruso, Mariana Ridolfi, Carlo Lugnan, Aleksandar Miladinović, Maja Ukmar, Maria Assunta Cova, et al. A ct perfusion based model predicts outcome in wake-up stroke patients treated with recombinant tissue plasminogen activator. *Physiological Measurement*, 41(7):075011, 2020.
- [4] Miloš Ajčević, Giovanni Furlanis, , Aleksandar Miladinović, et al. Hyper-acute eeg alterations predict functional and morphological outcomes in thrombolysis-treated ischemic stroke: a wireless eeg study. *Medical Biological Eng Computing (MBEC)*, 2020, - journal article accepted for publication; in production.
- [5] Miloš Ajčević, Giovanni Furlanis, Aleksandar Miladinović, Alex Buoite Stella, Paola Caruso, Maja Ukmar, Maria Assunta Cova, Marcello Naccarato, Agostino Accardo, and Paolo Manganotti. Early eeg alterations correlate with ctp hypoperfused volumes and neurological deficit: A wireless eeg study in hyper-acute ischemic stroke. *Annals of Biomedical Engineering*, pages 1–9, 2021.
- [6] Joanna Jarmolowska, Marco Colussi, Aleksandar Miladinović, Marusic Uros, and Piero Paolo Battaglini. Neurofeedback induced restoration on sensorimotor rhythm after 24h of hand immobilization. *Book chapter in "Sodobni Pogledi Na Mozgansko Kap" [New insight into Stroke]*, Marija Menih, Josef Magdic, Martin Rakusa, UKC Maribor, Slovenia, pages pp 159–164, ISBN 978-961-7039-13-9, 2018.
- [7] Marco Simões, Davide Borra, Eduardo Santamaría-Vázquez, Mayra Bittencourt-Villalpando, Dominik Krzemiński, Aleksandar Miladinović, et al. Bciaut-p300: A multi-session and multi-subject benchmark dataset on autism for p300-based brain-computer-interfaces. *Frontiers in Neuroscience*, 14, 2020.
- [8] Miloš Ajčević, Giovanni Furlanis, Aleksandar Miladinović, Marcello Naccarato, Giulia Silveri, Paola Caruso, Agostino Accardo, and Paolo Manganotti. Wireless eeg in hyper-acute ischemic stroke: correlation between neurophysiological alterations and ctp total hypoperfused volume. *Procedia Computer Science*, 176:2923–2929, 2020.

- [9] Miloš Ajčević, Aleksandar Miladinović, Giulia Silveri, Giovanni Furlanis, Tommaso Cilotto, Alex Buoite Stella, Paola Caruso, Maja Ukmar, Marcello Naccarato, Alfredo Cuzzocrea, et al. A big-data variational bayesian framework for supporting the prediction of functional outcomes in wake-up stroke patients. In *Lecture Notes in Computer Science*, pages 992–1002. Springer, Cham, 2020.
- [10] Aleksandar Miladinović, Miloš Ajčević, Pierpaolo Busan, Joanna Jarmolowska, Giulia Silveri, Manuela Deodato, Sussana Mezzarobba, Piero Paolo Battaglini, and Agostino Accardo. Evaluation of motor imagery-based bci methods in neurorehabilitation of parkinson's disease patients. In *2020 42nd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)*, pages 3058–3061. IEEE, 2020.
- [11] Aleksandar Miladinović, Miloš Ajčević, Piero Paolo Battaglini, Giulia Silveri, Gaia Ciacchi, Giulietta Morra, Joanna Jarmolowska, and Agostino Accardo. Slow cortical potential bci classification using sparse variational bayesian logistic regression with automatic relevance determination. In *Mediterranean Conference on Medical and Biological Engineering and Computing*, pages 1853–1860. Springer, 2019.
- [12] Aleksandar Miladinović, Antonella Barbaro, Eddi Valvason, Miloš Ajčević, Agostino Accardo, Piero Paolo Battaglini, and Joanna Jarmolowska. Combined and singular effects of action observation and motor imagery paradigms on resting-state sensorimotor rhythms. In *Mediterranean Conference on Medical and Biological Engineering and Computing*, pages 1129–1137. Springer, 2019.
- [13] Aleksandar Miladinović, Miloš Ajčević, and Agostino Accardo. Performance of dual-augmented lagrangian method and common spatial patterns applied in classification of motor-imagery bci. *VII Congress of the National Group of Bioengineering (GNB2020)*, 2020, - manuscript accepted for publication.
- [14] Aleksandar Miladinović, Miloš Ajčević, Pierpaolo Busan, Joanna Jarmolowska, Giulia Silveri, Susanna Mezzarobba, Piero Paolo Battaglini, and Agostino Accardo. Transfer learning improves mi bci models classification accuracy in parkinson's disease patients. *2020 28th European Signal Processing Conference (EUSIPCO 2020)*, 2020, manuscript accepted for publication.
- [15] Silvia Marino, Giulia Silveri, Lilla Bonanno, Simona De Salvo, Emanuele Cartella, Aleksandar Miladinović, Miloš Ajčević, and Agostino Accardo. Linear and non-linear analysis of eeg during sleep deprivation in subjects with and without epilepsy. In *Mediterranean Conference on Medical and Biological Engineering and Computing*, pages 125–132. Springer, 2019.
- [16] Miloš Ajčević, Manuela Deodato, Luigi Murena, Aleksandar Miladinović, Susanna Mezzarobba, and Agostino Accardo. Assessment of mobility deficit and treatment efficacy in adhesive capsulitis by measurement of kinematic parameters using imu sensors. In *2020 IEEE International Symposium on Medical Measurements and Applications (MeMeA)*, pages 1–5. IEEE, 2020.
- [17] Giulia Silveri, Lorenzo Pascazio, Aleksandar Miladinović, Miloš Ajčević, and Agostino Accardo. Smoking effect on the circadian rhythm of blood pressure in hypertensive subjects. *VII Congress of the National Group of Bioengineering (GNB2020)*, 2020, - manuscript accepted for publication.
- [18] Miloš Ajčević, Giovanni Furlanis, Aleksandar Miladinović, Lara Stragapede, Giulia Silveri, Paola Caruso, Marcello Naccarato, Paolo Manganotti, and Agostino Accardo. Correlation

between hyper-acute eeg alterations and 7-day nihss score in thrombolysis treated ischemic stroke patients. *VII Congress of the National Group of Bioengineering (GNB2020)*, 2020, - manuscript accepted for publication.

- [19] Giulia Silveri, Marco Merlo, Luca Restivo, Beatrice De Paola, Aleksandar Miladinović, Miloš Ajčević, Gianfranco Sinagra, and Agostino Accardo. Identification of ischemic heart disease by using machine learning technique based on parameters measuring heart rate variability. *2020 28th European Signal Processing Conference (EUSIPCO 2020)*, 2020, manuscript accepted for publication.
- [20] Joanna Jarmolowska, Aleksandar Miladinović, Eddi Valvason, Pierpaolo Busan, Milos Ajcevic, Piero Paolo Battaglini, and Agostino Accardo. Effects of mirror therapy on motor imagery elicited erd/s: An eeg study on healthy subjects. In *8th European Medical and Biological Engineering Conference (EMBEC2020)*, Chapter 51, 2020 - manuscript accepted for publication; in press.
- [21] Samer Schaat, Aleksandar Miladinović, Stefan Wilker, Stefan Kollmann, Stephan Dickert, Erdem Geveze, and Verena Gruber. Emotion in consumer simulations for the development and testing of recommendations for marketing strategies. In *Proceedings of the 3rd Workshop on Emotions and Personality in Personalized Systems 2015*, pages 25–32, 2015.
- [22] Samer Schaat, Stefan Wilker, Aleksandar Miladinovic, Stephan Dickert, Erdem Geveze, and Verena Gruber. Modelling emotion and social norms for consumer simulations exemplified in social media. In *2015 International Conference on Affective Computing and Intelligent Interaction (ACII)*, pages 851–856. IEEE, 2015.