Davide Valeriani

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EDUCATION

2013 – present	PhD in Computing and Electronic Systems, University of Essex (UK). *Improving group decision making with collaborative Brain-Computer Interfaces.* Supervisors: Prof. Riccardo Poli and Dr. Caterina Cinel.
2010 – 2013	Laurea Magistrale (MSc) *cum laude* in Computer Engineering, Università di Parma (Italy). *A 3D Perception System for Mobile Robot Navigation and Object Detection.* Supervisors: Prof. Stefano Caselli and Dr. Dario Lodi Rizzini.
2007 – 2010	Laurea (BSc) *cum laude* in Computer Engineering, Università di Parma (Italy).

RESEARCH INTERESTS

I work in the area of brain-computer interfaces (BCIs), devices that convert user's brain activity into commands. In particular, I apply BCIs to group decision-making, trying to improve the quality of the decisions that groups make by estimating the confidence of each group's member through the EEG signals.

RESEARCH EXPERIENCE

2015 – present	**Research Officer**, *School of CSEE, University of Essex, UK* Investigating brain-to-brain communication by means of EEG signals and electrostimulation. Using machine learning and feature extraction techniques to present neural signals in such a way that the human brain can learn to identify specific patterns.

TEACHING/LECTURING EXPERIENCE

2013 – present	**Graduate Laboratory Assistant**, *School of CSEE, University of Essex, UK* Holding lab activities and marking assignments in the following modules:

- CE101, Professional Development (2013-14 and 2014-15)
- CE151, Introduction to Programming (2014-15)
- CE204, Data Structures and Algorithms (2013-14 and 2014-15)
- CE320, Large Scale Software Systems and Extreme Programming (since 2013)
- CE881, Mobile & Social Applications Programming (since 2014-15)

2014 – 2015	**Graduate Laboratory Assistant**, *Department of Mathematical Sciences, University of Essex, UK* Holding lab activities and marking assignments in Applied Mathematics (MA105).

2012 – 2012	**Laboratory Assistant**, *Department of Information Engineering, Università di Parma, Italy* Holding lab activities and marking assignments in:

- Computer Architectures
- C++ Programming

LANGUAGES

Italian (fluent), English (fluent), French (basic), Spanish (basic).

PROFESSIONAL MEMBERSHIPS

Associate Fellow of the Higher Education Academy (AFHEA), Graduate Student Member IEEE, qualification to practice the profession of engineer (Italy).

GRANTS

2015   A departmental Research Innovation Fund grant (£5,000) for supporting the participation of the Essex team to the Cybathlon, an international championship for athletes with disabilities assisted by technology (including BCI).

POSITIONS OF RESPONSIBILITY

2013 – present   Member of the Student Conduct Panel, University of Essex.

2015 – 2015   Program Committee Co-Chair of the *7th Computer Science and Electronic Engineering Conference (CEEC'15).*

2014 – 2015   Postgraduate Research Students Representative, Faculty of Science and Health, University of Essex.

2013 – 2015   Postgraduate Research Students and GLA/GTAs Representative, School of CSEE, University of Essex.

2012 – 2013   Student Representative in the Senate, Students Council and Department of Information Engineering Council, Università di Parma.

2009 – 2013   Student Representative in the Computer Engineering Council and Evaluation Committee, Università di Parma.

CONFERENCES AND PRESENTATIONS

2015   European Conference on Data Analysis 2015 (ECDA'15), Colchester, UK – Oral presentation of the abstract "*A Comparison of Ensemble Methods for Motor Imagery Brain-Computer Interfaces.*"

2015   7th Computer Science and Electronic Engineering Conference (CEEC15), Colchester, UK – Oral presentation of the paper "*Towards a Wearable Device for Controlling a Smartphone with Eye Winks.*"

2015   7th International IEEE EMBS Neural Engineering Conference (NER), Montpellier, France – Oral presentation of the paper "*A Collaborative Brain-Computer Interface to Improve Human performance in a Visual Search Task.*"

2015   7th International IEEE EMBS Neural Engineering Conference (NER), Montpellier, France – Oral presentation of the paper "*A Collaborative Brain-Computer Interface for Improving Group Detection of Visual Targets in Complex Natural Environments.*"

2013   IV International Conference on Robotics in Education (RIE 2013), Lodz, Poland – Oral presentation of the paper "*Lessons Learned in a Ball Fetch-And-Carry Robotic Competition.*"

PUBLICATIONS

2015   D. Valeriani, A. Matran-Fernandez. *Towards a Wearable Device for Controlling a Smartphone with Eye Winks.* 7th Computer Science and Electronic Engineering Conference (CEEC15), Colchester, UK.

2015   D. Valeriani, R. Poli, C. Cinel. *A Collaborative Brain-Computer Interface to Improve Human performance in a Visual Search Task.* 7th International IEEE EMBS Neural Engineering Conference (NER), Montpellier, France.

2015   D. Valeriani, R. Poli, C. Cinel. *A Collaborative Brain-Computer Interface for Improving Group Detection of Visual Targets in Complex Natural Environments.* 7th International IEEE EMBS Neural Engineering Conference (NER), Montpellier, France.

2014   R. Poli, D. Valeriani, C. Cinel. *Collaborative Brain-Computer Interface for Aiding Decision-Making.* PLoS ONE, 9(7).

2014   M. Cigolini, A. Costalunga, F. Parisi, M. Patander, I. Salsi, A. Signifredi, D. Valeriani, D. Lodi Rizzini, S. Caselli. *Lessons Learned in a Ball Fetch-And-Carry Robotic Competition. Journal of Automation*, Mobile Robotics & Intelligent Systems, 8.

2013   D. Valeriani, D. Lodi Rizzini, F. Oleari, S. Caselli. *A View-point Planning and Navigation Algorithm for Mobile Robots using Depth Images.* Australasian Conference on Robotics and Automation (ACRA2013), Sydney.

2013   P. Mesejo, S. Cagnoni, A. Costalunga, D. Valeriani. *Segmentation of histological images using a metaheuristic-based level set approach.* Proceeding of the 15th annual conference companion on Genetic and evolutionary computation conference companion (GECCO '13 Companion), Amsterdam, The Netherlands.

REFEREES

Provided upon request.