Davide Valeriani

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Education

2013 – today	PhD in Computing and Electronic Systems, University of Essex, UK. *Improving group decision making with collaborative Brain-Computer Interfaces.* Supervisors: Professor Riccardo Poli and Dr Caterina Cinel.
2010 – 2013	MEng in Computer Engineering (*cum laude*), Università di Parma, Italy. *A 3D Perception System for Mobile Robot Navigation and Object Detection.*
2007 – 2010	BEng in Computer Engineering (*cum laude*), Università di Parma, Italy.

Research Interests

My research interests are in the area of biomedical signal processing and artificial intelligence, with a main focus on processing EEG signals. During my PhD I have applied collaborative brain-computer interfaces in the area of group decision making involving visual and auditory tasks. In particular, I have used neural, behavioural and physiological signals to estimate the decision confidence of the users and weigh their responses accordingly to improve group decisions.

Research Experience

2016 – today	**Senior Research Officer** *School of Computer Science and Electronic Engineering, University of Essex, UK.* Writing a literature review and a full grant proposal on neuroscience technologies to enhance group decision making to be submitted to the Defence Human Capability Science & Technology Centre, MoD.
2015 – today	**Research Officer** *School of Computer Science and Electronic Engineering, University of Essex, UK.* Investigating brain-to-brain communication via EEG signals and transcranial direct-current stimulation.
2015 – 2015	**Research Consultant** *Institute for Analytics and Data Science, University of Essex, UK.* Research consultancy for Objective Computing Ltd on the application of machine learning and big data analytics techniques in relation to marketing strategy.

Grants and Awards

May 2016	Winner of the IET Present Around The World (PATW) local network competition.
May 2015	Departmental Research Innovation Fund grant for supporting the participation of the Essex team to the Cybathlon 2016 (£4,990 - code DC10758).
Apr 2015	Winner of a student travel grant, 7^{th} International IEEE EMBS Neural Engineering Conference, Montpellier (France).
Mar 2015	London Science Museum Award for winning HackTheBrain UK.
Oct 2013	Winner of a student travel grant, 4^{th} International Conference on Robotics in Education, Lodz (Poland).
Sep 2012	Member of the winning team of the Sick Robot Day 2012.

Professional Memberships

Associate Fellow of the Higher Education Academy (UK), chartered Engineer (Italy), IEEE & EMBS student member.

References provided upon request.

Teaching Experience

2013 – today	**Graduate Laboratory Assistant (GLA)** *School of Computer Science and Electronic Engineering, University of Essex, UK* Holding lab activities and marking assignments in the following courses: Large Scale Software Systems and Extreme Programming, Mobile & Social Applications Programming, Introduction to Programming, Data Structures and Algorithms, Applied Mathematics, Professional Development.
2012 – 2012	**Laboratory Assistant** *Department of Information Engineering, Università di Parma, Italy* Holding lab activities in the following courses: Computer Architectures, C++ Programming.

Programming Languages

Python, C++, Java, Pascal, Matlab, Delphi, PHP, HTML, CSS.

Administration

2015 – today	Co-Director of EyeWink Ltd.
2013 – today	Member of the Student Conduct Panel, University of Essex, UK.
2015 – 2015	Programme Chair of the 7^{th} Computer Science and Electronic Engineering Conference.
2014 – 2014	Programme committee member of the 6^{th} Computer Science and Electronic Engineering Conference.
2014 – 2015	Postgraduate Research Students representative, Faculty of Science and Health, University of Essex, UK.
2013 – 2015	Research Students and GLA/GTAs representative, School of Computer Science and Electronic Engineering, University of Essex, UK.
2009 – 2013	Student Representative in the Senate, Students' Council, Department of Information Engineering Council, Computer Engineering Council and Evaluation Committee, Università di Parma, Italy.

Publications

1. A. Matran-Fernandez, **D. Valeriani**, & R. Poli. Toward BCIs Out of the Lab: Impact of Motion Artifacts on Brain-Computer Interface Performance. In P. Salvo & M. Hernandez-Silveira, editors, *Wireless Medical Systems and Algorithms*, Devices, Circuits, and Systems, chapter 9, pages 219–240. CRC Press, Feb 2016
2. **D. Valeriani**, R. Poli, & C. Cinel. A Collaborative Brain-Computer Interface to Improve Human Performance in a Visual Search Task. In *7th International IEEE EMBS Neural Engineering Conference*, 2015
3. **D. Valeriani**, R. Poli, & C. Cinel. A Collaborative Brain-Computer Interface for Improving Group Detection of Visual Targets in Complex Natural Environments. In *7th International IEEE EMBS Neural Engineering Conference*, 2015
4. **D. Valeriani**, A. Matran-Fernandez, D. Perez-Liebana, J. Asensio-Cubero, C. O'Connell, & A. Iacob. A Comparison of Ensemble Methods for Motor Imagery Brain-Computer Interfaces. In *European Conference on Data Analysis*, 2015
5. **D. Valeriani** & A. Matran-Fernandez. Towards a Wearable Device for Controlling a Smartphone with Eye Winks. In *7th Computer Science and Electronic Engineering Conference (CEEC15)*, 2015
6. R. Poli, **D. Valeriani**, & C. Cinel. Collaborative brain-computer interface for aiding decision-making. *PLoS ONE*, 9(7), Jul 2014
7. 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, 2014
8. **D. Valeriani**, D. Lodi Rizzini, F. Oleari, & S. Caselli. A Viewpoint Planning and Navigation Algorithm for Mobile Robots using Depth Images. In *Australasian Conference on Robotics and Automation (ACRA2013)*, Sydney, 2013
9. P. Mesejo, S. Cagnoni, A. Costalunga, & **D. Valeriani**. Segmentation of histological images using a metaheuristic-based level set approach. In *Proceeding of the fifteenth annual conference companion on Genetic and evolutionary computation conference companion - GECCO '13 Companion*, page 1455, Amsterdam, The Netherlands, Jul 2013. ACM Press
10. 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. In *IV International Conference on Robotics in Education*, Lodz, 2013