

CURRICULUM VITAE ET STUDIORUM

Maria Grazia Di Bono

February, 2013

CURRENT POSITION

- **Name:** Maria Grazia
- **Surname:** Di Bono
- **Nationality:** Italian
- **Date of birth:** 12/04/1975
- **Place of birth:** Potenza, Italy
- **Address:** Via Venezia, 12, Padua (Italy)
- **Telephone number:** (+39)0498276642
- **E-mail:** mariagrazia.dibono@unipd.it; mgdibono@gmail.com
- **Current position:** Post-doc researcher, Department of General Psychology, University of Padua (Italy)

EDUCATION

April 2009 - PhD in Psychology / Cognitive Science, Department of Developmental Psychology and Socialization (DPSS), University of Padua (Italy). Thesis: "Beyond mind reading: Advanced Machine learning Techniques for fMRI data analysis".

October 2002 - **M.Sc. Degree in Computer Science**, Faculty of Computer Science, University of Pisa, Italy. Master Thesis developed at the Institute of Information Science and Technologies (ISTI) of the CNR in Pisa, with title: "An approach based on Self-Organizing Maps for three-dimensional image matching".

July 1993 - **Scientific Diploma**, Scientific College "Ettore Majorana", Genzano di Lucania (PZ)

TRAINING AND PROFESSIONAL EXPERIENCES

ABROAD EXPERIENCES

March 1 – May 31 2008

Visiting Ph.D. student at the System, Models & Control (SMC) group, Department of Electrical Engineering, University of Leuven (Belgium), under the supervision of Prof. Johan Suykens.

October 16-30 2005

Visiting research fellow at the Dorodnicyn Computing Centre of the Russian Academy of Sciences, Moscow (Russia), under the supervision of Prof. Igor B. Gurevich.

TRAINING COURSES

February 26-29 2008: 3rd M-Bic fMRI school, Maastricht Brain Imaging Center and the Faculty of Psychology, at Maastricht University (The Netherlands).

October 21-26 2007: Advanced School on Pattern Analysis, within the Workshop “The Analysis of Patterns”, Bertinoro (Italy).

September 15-22 2007: NUMBRA Summer School 2007 : Numeracy and brain development: progress and prospects, Santorini (Greece)

June 1-11 2006: AFNI Course for processing, analyzing, and displaying functional MRI (fMRI) data, Pisa, Italy.

PROFESSIONAL EXPERIENCES

November 2009 – present Post-doc researcher at the Department of General Psychology, University of Padua (Italy)

January 2006 – January 2009 — PhD student in Psychology/Cognitive Science, Computational Cognitive Neuroscience Laboratory (CCNL), General Psychology Department, University of Padua (Italy).

September 2007 – February 2008 – Collaboration CAREL S.p.a. (Padua, Italy) – Department of General Psychology, University of Padua (Italy). Research project: Machine Learning techniques for predictive maintenance HVAC/R.

March 2003 / December 2005 — Research fellow at the Signal and Image Laboratory, Institute of Information Science and Technologies (ISTI) of the CNR in Pisa, Italy.

December 2001 — Collaboration ENEL (Pisa, Italy) - University of Pisa, Italy: Design and development of a prototypical software, based on a hybrid system using neural networks and artificial intelligence techniques, for monitoring a thermoelectric boiler.

PUBLICATIONS

Cumulative Impact Factor = 19.27

H-Index (Google Scholar) = 4

JOURNALS

- Di Bono, M. G., Begliomini, C., Castiello, U., & Zorzi, M. (submitted). Probing the grasping circuit in humans through multivoxel pattern decoding.
- Di Bono, M. G., & Zorzi, M. (accepted). The spatial representation of numerical and non-numerical ordered sequences: Insights from a random generation task. Quarterly Journal of Experimental Psychology.

DOI:10.1080/17470218.2013.779730.

- Gava, L., Valenza, E., Di Bono, M. G., & Tosatto, C. (2012). Discrimination and Ordinal Judgments of Temporal Durations at 3 Months. *Infant Behavior and Development*, 35 (4), 751-760.
- Di Bono, M. G., Casarotti, M., Priftis, K., Gava, L., Umiltà, C., & Zorzi, M. (2012). Priming the mental time line. *Journal of Experimental Psychology: Human Perception and Performance*, 38 (4), 838. doi: 10.1037/a0028346.
- Cavinato, M., Di Bono, M. G., Cisotto, G., Genna, C., Marangon, M., Zorzi, M., & Piccione, F. (2011). The effects of transcranial direct current stimulation on oscillatory brain activity in vegetative state: a preliminary study. *Archives Italiennes de Biologie a Journal of neuroscience*, 149(3): S29.
- Kramer, P., Di Bono, M. G., & Zorzi, M. (2011). Numerosity Estimation in Visual Stimuli in the Absence of Luminance-Based Cues. *PLoS ONE* 6(2): e17378. doi:10.1371/journal.pone.0017378.
- Zorzi, M., Di Bono, M. G., & Fias, W. (2011). Distinct representations of numerical and non-numerical order in the human intraparietal sulcus revealed by multivariate pattern recognition. *Neuroimage*, doi: 10.1016/j.neuroimage.2010.06.035.
- Di Bono, M. G., & Zorzi, M. (2008). Decoding cognitive states from fMRI data using Support Vector Regression. *Psychology Journal*, 6 (2), 189-201.
- Colantonio, S., Benvenuti, M., Di Bono, M. G., Pieri, G., & Salvetti, O. (2007). Object tracking in a stereo and infrared vision system. *Infrared Physics & Technology*, 49(3), 266-271.
- Bozzi, E., Cavaccini, G., Chimenti, M., Di Bono, M. G., & Salvetti O., (2005). A two dimensional wavelet-based approach to recognise defects in C-scan maps. *Pattern Recognition and Image Analysis, Mank-Hayka/Interperiodica*, 15(2), 516-519.
- Benvenuti, M., Colantonio, S., Di Bono, M. G., Pieri, G., & Salvetti, O., (2005). Tracking of Moving Targets in Video Sequences. *WSEAS Transaction on Systems*, 4(4), 359-364.
- Di Bono, M. G., Pieri, G., & Salvetti O. (2004). A tool for system monitoring based on artificial neural networks. *WSEAS Transaction on Systems*, 3 (2), 746 - 751.
- Di Bono, M.G., Colantonio, S., Martinelli, M., Pieri, G., & Salvetti, O. (2005). Representation and Communication of Multimedia Data and Metadata. *ERCIM News*, 62, 27-28.
- Colantonio, S., Di Bono, M.G., Pieri, G., & Salvetti, O. (2005). Processing multimedia biomedical information for disease evolution monitoring. *ERCIM News*, 60, 28-29

PROCEEDINGS

- Colantonio, S., Di Bono, M. G., Pieri, G., Solveti, O., & Cavaccini, G.

- (2005). *System health monitoring using multilevel artificial neural networks*. IEEE International Conference on Computational Intelligence for Measurement Systems and Applications - CIMSA 2005 (Giardini Naxos - Taormina, Italy). IEEE proceedings, pp. 50-55.
- Di Bono, M. G., Pieri, G., & Salvetti, O. (2005). *Multimedia target tracking through feature detection and database retrieval*. 22th International Conference on Machine Learning - Workshop on Machine Learning Techniques for Processing Multimedia Content (Bonn - Germany). ACM proceedings, pp. 19-22. Luc De Raedt, Stefan Wrobel (Eds.).
 - Asirelli, P., Di Bono, M. G., Martinelli, M., Salvetti, O., Signore, O., Catasta, M., Morbidoni, C., Piazza, F., & Tummarello, G. (2005). *Toward a scalable multimedia metadata infrastructure using distributed computing and semantic web technologies*. The 2nd European Workshop on Integration of Knowledge, Semantics and Digital Media Technology - EWIMT 2005. IEEE proceedings, pp. 153-156.
 - Colantonio, S., Di Bono, M. G., & Salvetti, O. (2005). *Disease evolution prognosis based on multi-source signals and image analysis*. Advanced Information and Telemedicine Technologies for Health (Minsk, Belarus, November 8-10, 2005). Proceedings, vol. 1 pp. 66-69. Sergey Ablameyko, Yevgenii Beloenko, Uladzimir Anishchanka (Eds.).

ORAL PRESENTATIONS

- Kramer, P., Di Bono, M. G., & Zorzi, M. (2008, September). *Le basi percettive della stima di numerosità*. XIV Congresso Nazionale Associazione Italiana di Psicologia (AIP), Padova, Italy.
- Di Bono, M. G., & Zorzi, M. (2007, June). *Decoding cognitive states from fMRI data using Support Vector Machines*. Fifth Symposium on Human-Computer Interaction HCIItaly, Padua, Italy.
- Di Bono, M. G., Pieri G., & Salvetti O. (2005, August). *Multimedia target tracking through feature detection and database retrieval*. 22th International Conference on Machine Learning - Workshop on Machine Learning Techniques for Processing Multimedia Content, Bonn, Germany.

POSTERS

- Braun M., Di Bono, M. G., Zorzi M., Jacobs, A. M., & Ziegler J.C. (2012, May). *Neural networks of emotion processing of faces and words*. 1st Conference of the European Society for Cognitive and Affective Neuroscience, Marseille, France.
- Di Bono, M. G., & Zorzi, M. (2011, September). *A generative hierarchical model for location invariant visual word recognition: a computational study*. 17th meeting of the European Society for Cognitive Psychology (ESCOP), San Sebastian, Spain.
- Ziegler, J. C., Braun, M., Di Bono, M. G., Zorzi, M., & Jacobs, A. (2011, September). *Neural basis of emotional processing of faces and words*. XI International Conference on Cognitive Neuroscience (ICON), Palma, Mallorca, Spain.
- Gava, L., Valenza, E., & Di Bono, M. G. (2010, March). *Temporal ordinal*

judgments at 3 months of life. XVIIth Biennial International Conference on Infant Studies, Baltimore, Maryland, USA.

- Gava, L., Valenza, E., & Di Bono, M. G. (2009, June). *Temporal ordinal judgments at three months of life*. CogEvo: Workshop on Cognition and Evolution, Rovereto, Italy.
- Di Bono, M. G., & Zorzi, M. (2009, January). *The spatial representation of numerical and non-numerical sequences: Evidence from pseudoneglect*. Twenty-seventh European Workshop on Cognitive Neuropsychology, Bressanone, Italy.
- Di Bono, M. G., & Zorzi, M. (2007, October). *Machine Learning approaches to multivariate analysis of fMRI data*. Workshop “The Analysis of Patterns” within the Advanced School on Pattern Analysis, Bertinoro, Italy.
- Di Bono, M. G., González, A., & Zorzi, M. (2007, September). *Exploring numerical and non-numerical space by random sequence generation*. NUMBRA Summer School 2007: Numeracy and brain development: progress and prospects, Santorini (Greece).

MAIN RESEARCH INTERESTS

- Machine Learning algorithms for fMRI data analysis
- Graph theoretical analysis of functional brain networks (fMRI and EEG data)
- Connectionist models of human cognition
- Numerical Cognition
- Number-space-time interactions
- Machine Learning applications

WORK IN PROGRESS

Connectionist models of human cognition

Computational simulations for visual word recognition through generative models.

EEG study

Collaboration with Dr. Francesco Piccione (IRCCS S. Camillo Hospital, Lido di Venezia): a functional connectivity study based on EEG signals, recorded in resting state from patients with consciousness disorder.

fMRI study

Collaboration with Prof. Johannes Ziegler (Laboratorio di Psicologia Cognitiva (LPC), CNRS, University of Aix-Marseille): an fMRI study on emotion coding.

TEACHING EXPERIENCE

Dicember 2012

Invited lecture by Prof. Antonio Vallesi, for the course of “Neuroimaging and brain stimulation” (laurea magistrale in Cognitive neuroscience and clinical neuropsychology), Department of General Psychology, University of Padua (Italy): “Beyond mind reading: machine learning techniques for fMRI data analysis”.

March 2006

Matlab teaching for an advanced course for research (CAR), Department of General Psychology, University of Padua (Italy).

March 2006

Lecture of Artificial Intelligence for the course of Artificial Intelligence, conducted by Prof. Marco Zorzi, Department of General Psychology, University of Padua (Italy): “Neural network applications”.

Dicember 2006

Lecture of Neural Networks for the course of Artificial Intelligence, conducted by Prof. Silvana Badaloni, Department of Information Engineering, University of Padua (Italy): “Neural network applications in industrial field”.

TECHNICAL / SCIENTIFIC SKILLS

- **Programming Languages:** Matlab, Octave, C, Java, Java Server Pages (JSP), Javascript, HTML, XML
- **Statistical packages:** SPSS, Matlab
- **Office package**
- **Programs:** E-Prime, SPM, AFNI

LANGUAGES

English: optimal knowledge of written and spoken English

French: scholastic knowledge

AWARDS

September 2008

Junior Research Award, Department of Developmental Psychology and of Socialization (DPSS), University of Padua

Di Bono, M. G., & Gava, L. Research project: “The representation of spatial, numerical and temporal knowledge in infants and adults”.

AD HOC REVIEWER

- IEEE Transaction on Neural Networks
- Cognitive Science
- Frontiers in Human Neuroscience
- IEEE World Congress on Computational Intelligence, International Joint Conference on Neural networks (WCCI – IJCNN 2010; 2011)
- IEEE Third World Congress on Nature and Biologically Inspired Computing (NaBIC 2011)