CURRICULUM VITAE
Vincenzo G. Fiore

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Education

PhD in Psychobiology and Psychopharmacology, Sapienza - Università di Roma, IT, Jan 2012.

MSc by Res. in Philosophy, major Philosophy of Mind, University of Edinburgh, UK, Nov 2007.

Laurea in Philosophy, major Cognitive Science, Università degli Studi di Siena, IT, Nov 2005.

Research Positions

Jan 2016 - present - Research Associate. Centre for BrainHealth, UTD, Dallas, USA.

Computational models of addiction in humans (focus on the neural dynamics of corticostriatal circuits) and spatial navigation in insects (focus on the neural dynamics of the central complex). Task development and data analysis (behaviour and fMRI) in healthy and addict individuals (nicotine and cocaine). Supervision of PhD and undergraduate students.

Jan 2013 – Nov 2015 - Research Associate. Wellcome Trust Centre for Neuroimaging, Institute of Neurology, UCL, London, UK.

Neural models of decision making and action selection in humans (corticostriatal circuits) and insects (central complex), under aminergic modulation. Task development and data analysis (behaviour and fMRI) in healthy and Parkinson's disease volunteers.

Oct 2007 - Oct 2012 – Intern (2007-08) and Early Stage Researcher (2008-12). Laboratory Of Computational Embodied Neuroscience**,** ISTC-CNR, Rome, IT.

Neural network programming (Matlab and C++) focusing on learning processes, motivations, stress coping and action selection in bio-inspired systems. Dynamics and effects of catecholamine releases in Cortex and striatum (dopamine and noradrenaline in particular).

Teaching Experience

July 2017: Computational Psychiatry Course at UCL: invited talk.

July-December 2016: Matlab methods. Weekly appointment with PhD students and interns to develop Matlab scripts for data analysis, task implementation, modelling etc.

January 2015 - Workshop: "Connectionism: from structures to functions" for MSc students at UCL.

Feb-Mar 2012 - Temporary Lecturer. Faculty of Medicine and Psychology, Sapienza - Università di Roma. Course: “Computational embodied neuroscience”.

Publications

(in preparation) Na S., Jung J, Hula A, **Fiore VG**, Gu X. Neurocomputational mechanisms of learned and perceived controllability in a social environment

(in preparation) **Fiore VG**, Ognibene D, Adinoff B, Gu X. A Multilevel Computational Characterization of Endophenotypes in Addiction.

(in preparation) Yu J.-C., **Fiore VG**, Spence JS, Briggs RW, Braud J, Adinoff B, Gu X. Aberrant information processing in addiction: model-based fMRI reveals alterations in circuit gain.

(under review) Ognibene D, **Fiore VG**, Gu X. Addiction in a bounded rational model: the role of exploration and environment structure.

(under review) **Fiore VG**, Nolte T, Rigoli F, Smittenaar P, Gu X, Dolan RJ. Value Encoding in the Globus Pallidus: fMRI reveals an interaction effect between reward and dopaminergic drive.

(under review) Kottler B, **Fiore VG**, et al. A lineage-related reciprocal inhibition circuitry for sensory-motor action selection. (preprint 2017, bioRxiv 100420).

Fiore VG, Kottler B, Gu X, Hirth F. (accepted 2017) In silico interrogation of insect central complex suggests computational roles for ellipsoid body in spatial navigation. **Front Behav Neurosci** doi: 10.3389/fnbeh.2017.00142

Fiore VG, Rigoli F, Stenner MP, Zaehle T, Hirth F, Heinze HJ, Dolan RJ. 2016. Changing pattern in the basal ganglia: motor switching under reduced dopaminergic drive. **Sci Rep.** 6: 23327. doi: 10.1038/srep23327

Hauser TU, **Fiore VG**, Moutoussis M, Dolan RJ. 2016. Computational psychiatry of ADHD: Neural gain impairments across Marrian levels of analysis. **Trends Neurosci.**, 39(2):63-73. doi: 10.1016/j.tins.2015.12.009

Fiore VG, Dolan RJ, Strausfeld NJ, Hirth F. 2015 Evolutionary conserved mechanisms for the selection and maintenance of behavioural activity. **Philos Trans R Soc Lond B Biol Sci**. 19;370(1684). pii: 20150053. doi: 10.1098/rstb.2015.0053.

Fiore VG, Mannella F, Mirolli M, Latagliata EC, Valzania A, Cabib S, Dolan RJ, Puglisi-Allegra S, Baldassarre G. 2015 Corticolimbic catecholamines in stress: a computational model of the appraisal of controllability. **Brain Struct Func**. 220(3):1339-1353. Epub 2014 Doi: 10.1007/s00429-014-0727-7

Fiore VG, Sperati V, Mannella F, Mirolli M, Gurney K, Friston K, Dolan RJ, Baldassarre G. 2014. Keep focussing: striatal dopamine multiple functions resolved in a single mechanism tested in a simulated humanoid robot. **Front Psychol**. 5:124. doi: 10.3389/fpsyg.2014.00124

Taffoni F, Formica D, Schiavone G, Scorcia M, Tomassetti A, Polizzi di Sorrentino E, Sabbatini G, Truppa V, Mannella F, **Fiore VG**, et al. 2013. The "Mechatronic Board": A Tool to Study Intrinsic Motivations in Humans, Monkeys, and Humanoid Robots. In G. Baldassarre and M. Mirolli (Eds.): **Intrinsically Motivated Learning in Natural and Artificial Systems**, Springer Berlin Heidelberg pages 411-432

Baldassarre G, Mannella F, **Fiore VG**, Redgrave P, Gurney K, Mirolli M. 2013. Intrinsically motivated action-outcome learning and goal-based action recall: a system-level bio-constrained computational model. **Neural Netw.** 41:168-187. doi: 10.1016/j.neunet.2012.09.015

Fiore VG. 2010. Multiple realizations of the mental states - hunting for plausible chimeras. In M. D'Agostino et al. (Eds.): **New Essays in Logic and Philosophy of Science**, Kings College Publications: London, pages 529-538.

Fiore VG, Mannella F, Mirolli M, Gurney K, Baldassarre G. 2008. Instrumental Conditioning Driven by Neutral Stimuli: A Model Tested with a Simulated Robotic Rat. In M. Schlesinger et

al. (Eds.), **Proceedings of the 8th conference on Epigenetic Robotics**, in University of Sussex, UK. Lund University Cognitive Studies, 139, pages 13-20.

In Italian

Rizzoni, M. Calvano, R. et al. 2014. Libro Bianco – Università e Ricerca. Guidoni U, **Fiore VG**, et al. (Eds.) Rubbettino editore. ISBN 9788849841237

Conference abstracts: posters and short presentations

- SfN, Annual Meeting of the Society for Neuroscience. Washington DC, US, November 2017.
- 12th International Basal Ganglia Society Meeting. Mérida, MX, March 2017
- NIPS2016 Workshop: Imperfect Decision Makers. Barcelona, ES, December 2016
- UT Dallas – UC Berkeley Symposium. Dallas, US, April 2016
- Genetics Society Autumn Meeting. London, UK, November 2015
- FENS, Brain Conference. Rungstedgaard, DK, April 2015
- CNS, annual meeting of the Cognitive Neuroscience Society. Boston, US, April 2014.
- Workshop on Intrinsic Motivations and Open-ended Learning, Roma, IT, June 2013.
- ICDL-EPIROB - Joint IEEE International Conference. Frankfurt am Main, DE, August 2011
- SfN, Annual Meeting of the Society for Neuroscience. San Diego, US, November 2010.
- BCCN, Bernstein Conference on Comp. Neuroscience. Frankfurt am Main, DE, October 2009.
- EPIROB 8: Epigenetic Robotics Conference, Sussex Univ., UK, July 2008
- PPNB, Philosophy of Psychology, Neuroscience, and Biology. Bristol, UK, March 2007.

Additional Information

Languages

Italian (mother tongue).

English (excellent).

Computer proficiencies

Matlab (excellent)

C++ (fair)

Latex (fair)

Website programming (fair): wordpress, dokuwiki, d-html.