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Alejandro F. Bujan

Education

Ph.D., expect. 2014	Biology, Computational Neuroscience Program
	Bernstein Center Freiburg (BCF), University of Freiburg
	Thesis: *Modulation and Propagation of Correlations in Neuronal Networks.*
M.Sc., 2009	Computer Science, Computer Science Program, University of Birmingham
	Thesis: *STACT : a Software Tool for Predicting Epileptic Seizures.*
B. A., 2008	Biophysics, Autonomous University of Madrid

Research Positions

3/2010-present	BCF doctoral student, Advisors: Ad Aertsen & Arvind Kumar
	Marie Curie EU grant (FACETS-ITN)
1/2013-3/2013	Visiting scientist, Blue Brain Project (EPFL-Switzerland)
1/2008-9/2008	Undergraduate researcher, Advisor: Liset Menendez de la Prida
	Cajal Institute-C.S.I.C. Neural Circuits Laboratory

Publications

Premysl Jiruska, Jozsef Csicsvari, Andrew Powell, John Fox, Wei-Chih Chang, Martin Vreugdenhil, Xiaoli Li, Milan Palus, **Alejandro F. Bujan**, Richard Dearden, & John Jefferys (2010) High-frequency network activity, global increase in neuronal activity and synchrony expansion precede epileptic seizures in vitro. J Neurosci, Vol. 30, No. 16., pp. 5690-5701

In Preparation

Alejandro F. Bujan, Ad Aertsen, & Arvind Kumar. Dynamical Modulation of Correlations in Neuronal Networks.

Alejandro F. Bujan, Gerald Hahn†, Yves Fregnac and Ad Aertsen, & Arvind Kumar. Communication Through Resonance in Spiking Neuronal Networks.

Selected Conference Presentations

Gerald Hahn, **Alejandro F. Bujan**, Yves Fregnac, Ad Aertsen, & Arvind Kumar (2013) Synfire chains and gamma oscillations: two complementary modes of information transmission in cortical networks. BMC Neuroscience 2013, 14(Suppl 1):P226 doi:10.1186/1471-2202-14-S1-P226

Alejandro F. Bujan, Gerald Hahn, Yves Fregnac, Ad Aertsen, & Arvind Kumar (2013) Propagation of synchronous activity through network resonance. Bernstein Conference 2013. doi: 10.12751/nncn.bc2013.0132

Alejandro F. Bujan, Arvind Kumar, & Ad Aertsen (2012) Structure of stimulus induced correlations in random networks with distance dependent connectivity. COSYNE, Salt Lake City, Utah.

Alejandro F. Bujan, Arvind Kumar, & Ad Aertsen (2012). Stimulus driven correlation gain modulation in neuronal networks. Front. Comput. Neurosci. Bernstein Conference 2012. doi: 10.3389/conf.fncom.2012.55.00147

Grace Lindsay, **Alejandro F. Bujan,** Ad Aertsen, & Arvind Kumar (2012) Membrane potential statistics reveal detailed correlation structure. Front. Comput. Neurosci. Bernstein Conference 2012. doi: 10.3389/conf.fncom.2012.55.00135

Teaching

2013	Scientific Programming with Python, responsible for teaching *Introduction to Scientific Plotting with Matplotlib.*
	Simulation of Biological Neuronal Networks, responsible for teaching *Network Topology and Dynamics.*
2012	Quantitative Methods, responsible for tutoring and preparing exercises for *Signal Processing, Digital Signals and Stochastic Processes.*
	Simulation of Biological Neuronal Networks, responsible for teaching *Network Topology and Dynamics.*
2011	Scientific Programming with Python, responsible for teaching *Advanced Data Structures and Numpy Arrays.*
	Analysis and Models in Neurophysiology, responsible for tutoring *Neuronal*

† Shared first authorship

Data Analysis.

Training & Workshops

Advanced Scientific Programming in Python Summer School (8/2012) *Kiel, Germany.*

Sensory Coding and Natural Environment (8/2012) *IST Austria*

Neural Coding in Sensory Systems (1/2012) *FENS-IBRO-Hertie Winter School, Obergurgl, Austria.*

FACETS-ITN Course: *Bio-Electronic Interface* (3/2012) Bordeaux, France

FACETS-ITN Course: *High-Performance Computing* (3/2012) Juelich, Germany

FACETS-ITN Course: *Neuromorphic Electronic Circuits* (9/2011) Heidelberg, Germany

FACETS-ITN Course *Mean field models* (6/2011) Lausanne, Switzerland

FACETS-ITN Course *Theoretical Neuroscience* (6/2011) Lausanne, Switzerland

FACETS-ITN Course *Intellectual Property* (3/2011) Barcelona, Spain