

Seminarios LEICI

An excellent time to work on statistical neuroscience + A novel technique to estimate latent processes of multineuron spike recordings

por el Dr. **Joaquín RAPELA**

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en Gatsby Computational Neuroscience Unit, de la University College London, Londres, UK

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Sala de Conferencias, 1er piso, Depto. Electrotecnia, Facultad de Ingeniería, UNLP

RESUMEN:

In the first part of the talk I will describe our efforts at the Gatsby Computational Neuroscience Unit and Sainsbury Wellcome Centre for Neural Circuits and Behavior to facilitate collaborations between experimental and computational neuroscientists. I will next explain why I believe that this is an excellent time to work on statistical neuroscience.

Novel electrophysiology technology allows to simultaneously record spiking activity of hundreds of single neurons. Evaluating neural activity in single trials is becoming increasingly important. This large number of single neurons monitored across multiple trials create a deluge of information. Shall we model the activity of large populations with single-neuron models or with neural ensemble models?

In the second part of this talk I will describe Sparse Variational Gaussian Process Factor Analysis <https://github.com/joacorapela/svGPFA> a Bayesian method that we are distributing to succinctly model large populations of single neurons, and to attain simultaneously single-neuron and ensemble descriptors of neural population spiking activity.

Biografía:

Joaquin is a Licenciado en Ciencias de la Computación from the Computer Science Department, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires. He obtained his PhD degree from the Signal and Image Processing Institute, Department of Electrical Engineering, University of Southern California. He performed postdoctoral research in EEG signal processing at the Swartz Center for Computational Neuroscience, University of California San Diego, and in statistical neuroscience to characterize epilepsy at Collective Neural Dynamics and Computation group of Wilson Truccolo at Brown University. He is currently a Senior Research Software Engineer at the Gatsby Computational Neuroscience Unit.