ELSC-ICNC Seminar: Shai Shoham

April 25, 2013

On the topic of: "Applied population neuronal interfaces: some new methods and results"

ELSC & ICNC cordially invite you

to the lecture given by:

Shai Shoham
Technion

On the topic of:

"Applied population neuronal interfaces: some new methods and results"

The lecture will be held on Thursday, April 25, 2013
at 17:00, at ELSC-ICNC: Silverman Bldg., 3rd Wing, 6th Floor, Edmond J. Safra Campus

Light refreshments at 16:45

Abstract:

The talk will present several recent steps in the development and application of tools for controlling and monitoring large neuronal populations and their potential application in medicine. I will first describe patterned holographic stimulation for simultaneously controlling populations of retinal ganglion cells with millisecond temporal precision and cellular resolution, and its early translation to in vivo conditions. Next, I will present recent results demonstrating highly structured encoding of speech features in neuronal populations recorded in human subjects, and the development of a simple and effective decoding strategy and structural inference for this data (joint work with Itzhak Fried and Ariel Tankus). The final part of the talk will describe the development of a rapid multiphoton temporal-focusing microscope allowing to monitor activity in >1000 neurons simultaneously in "optonet" artificial neural networks.
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