The Daniel Amit Lecture 2014-2015

November 6, 2014

Prof. Shaul Hochstein Department of Neurobiology and ELSC, The Hebrew University On the topic of: "The Attraction of Attractor Networks: a Tribute to Daniel Amit"

DANIEL AMIT MEMORIAL LECTURE 2014-2015

The Annual Lecture in Computational Neuroscience in memory of the late Professor Daniel Amit will be given by

Prof. Shaul Hochstein
ELSC, Institute of Life Sciences & Neurobiology Department Hebrew University

On the topic of:
"The Attraction of Attractor Networks: a Tribute to Daniel Amit"

Thursday, November 6th, 2014

at the ELSC-ICNC lecture hall
(Silverman Bldg., Wing 3, 6th floor - Edmond J. Safra Campus)

Light refreshments at 16:45

Abstract:

The theory that most attracted Daniel Amit was attractor networks, which are rich in features. This theory proposes two aspects to image representation, long-term silent memory: a synaptic structure, set up by repeated image presentation, and Working Memory: reverberating neural activity, initiated when a threshold number of network neurons is activated, and maintained by excitatory intra-network connections. We test this concept applying it to a variety of delay-match-to-sample tasks. In particular, we study
associative aspects of memory. We confront the theory with experimental phenomena to determine:
1- where does the theory lend an explanatory basis for the experimental phenomena?
2- where does the theory allow for the phenomena if one introduces further assumptions, without experimental proof?
3- where does the theory fail and/or need serious adaptation to be consistent with experimental phenomena?
4- what are possible adaptations to attractor theory that might broaden its explanatory power to include newly uncovered phenomena?

Tags: Events 2014-2015 Seminars The Daniel Amit Lecture