The Daniel Amit Lecture 2011-2012

November 3, 2011

The Annual Lecture in Computational Neuroscience in memory of the late Professor Daniel Amit will be given by Professor Misha Tsodyks - Weizmann Institute of Science.
The Annual Lecture in Computational Neuroscience in memory of the late Professor Daniel Amit will be given by Professor Misha Tsodyks Department of Neurobiology - Weizmann Institute of Science

On the topic of: Theory of associative retrieval from long-term memory

Thursday, November 03, 2011 at 17:00

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

Light refreshments at 16:45

Special annual fellowships in memory of Daniel Amit will be awarded to two outstanding ELSC-ICNC students

Lecture Abstract:

The question I will address in the lecture is how information is retrieved from memory when there are no precise item-specific cues.

Real life examples are when you try to recall the names of your class-mates, or your favorite writers, or places to see in Rome. I hypothesize that in this situation, retrieval occurs in an associative manner, i.e. each recalled item is triggering the retrieval of a subsequent one. Mathematically this problem can be reduced to random graphs, and general results about the retrieval capacity of the recall can be derived. The main conclusion of the analysis is that retrieval capacity is severely limited, such that only a small fraction of items can be recalled, with characteristic power-law scaling with the total number of items in memory. Theoretical results can be compared to free recall experiments and surprisingly good agreement is observed.

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