Machine Learning and Computational Biophysics

Biography

Prof. Naftali Tishby is a professor of Computer Science and the director of the Interdisciplinary Center for Neural Computation (ICNC). He is holding Ruth and Stan Flinkman Chair for Brain Research at the Edmond and Lily Safra Center for Brain Science (ELSC) at the Hebrew University of Jerusalem. He is one of the leaders of machine learning research and computational neuroscience in Israel and his numerous ex-students serve at key academic and industrial research positions all over the world. Prof.

Research

The interface between computer science, physics, and biology provides some of the most challenging problems in today’s science and technology. We focus on organizing computational principles that govern information processing in biology, at all levels. To this end, we employ and develop methods that stem from statistical physics, information theory and computational learning theory, to analyze biological data and develop biologically inspired algorithms that can account for the observed performance of biological systems. We hope to find simple yet powerful computational mechanisms that may characterize evolved and adaptive systems, from the molecular level to the whole computational brain and interacting populations. An example is the Information Bottleneck method [2] that provides a general principle for extracting relevant structure in multivariate data, characterizes complex processes, and suggests a general approach for understanding optimal adaptive biological behavior.

UPCOMING EVENTS

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Studying at ELSC

Our Int'l Ph.D. program provides outstanding students with top-notch courses in computational neuroscience.

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The Building
The Jerusalem Brain Sciences Building will provide a state-of-the-art research and teaching facility for the Edmond and Lily Safra Center for Brain Sciences.

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