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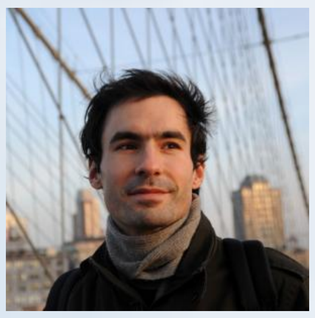
INTheory on-line Seminar Series 06

Understanding the structure-function mapping in recurrent neural networks



Speaker：Srdjan Ostojic （ENS, France)

Host：Haiping Huang

Abstract：

Unraveling the relation between the structure of networks of neurons and the computations they perform is one of the central goals of neuroscience. Recurrent neural networks provide a rich theoretical framework for exploring this structure-function mapping, yet remain in general difficult to interpret. We have recently introduced a simplified class of models, low-rank recurrent networks, that are analytically tractable while remaining highly expressive in terms of the computations they can perform. In this presentation, I will review the framework of low-rank networks, and in particular show how they reveal complementary computational roles for two aspects of connectivity structure: dimensionality and cell classes.

About speaker：

Srdjan Ostojic is a team leader of Laboratoire de Neurosciences Cognitives and Computationnelles at Ecole Normale Superieure. The aim of his research is to understand how thousands of neurons work together to perform computations that underlie behavior. His brief bio is as follows:

2012-now: CNRS Researcher, Group for Neural Theory, Ecole Normale Superieure Paris
2009-2012: Marie-Curie fellow, Center for Theoretical Neuroscience, Columbia University
2006-2009: postdoctoral fellow, Laboratoire de Physique Statistique, Ecole Normale Superieure Paris
2002-2006: PhD student, Institute for Theoretical Physics, Universiteit van Amsterdam

Time: 16:00-17:30, May 5, 2022

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