KIOS Distinguished Lecture Series

Prof. Constantine Dovrolis
Georgia Institute of Technology

Monday 1st of November 2021, 12:00 – 13:00

Room B108, Anastasios G. Leventis Building, or via zoom:
https://ucy.zoom.us/meeting/register/tJUof-utqjsrGdcER6qbGV0i5LxcBeROstwN

From the Brain to Graphs, Neural Networks and back to the Brain

LECTURE ABSTRACT

Our group focuses on the overlap between Network Science (the study of complex systems using network models and graph mining methods), Neuroscience, and Machine Learning. In a first research thrust, we study the brain using computational models and network analysis methods, leveraging rich recent datasets about the brain's connectome and activity. In a second research thrust, we design novel machine learning architectures that are inspired from what we know about the brain's structure and function.

This talk will focus on two problems – one from each research thrust:
a. Multi-sensory integration in the mammalian brain using network diffusion models.
b. Neuro-inspired design of sparse deep neural networks that can learn fast and generalize well.

The talk is designed for a general CS/EE audience with no prior background in network science, neuroscience or machine learning.

BRIEF BIO

Dr. Constantine Dovrolis is a Professor at the School of Computer Science at the Georgia Institute of Technology (Georgia Tech) – currently doing his sabbatical at CYENS in Cyprus. He is a graduate of the Technical University of Crete (Engr.Dipl. 1995), University of Rochester (M.S. 1996), and University of Wisconsin - Madison (Ph.D. 2000). His research combines Network Science, Data Mining and Machine Learning with applications in climate science, biology, neuroscience, sociology and machine learning. More recently, his group has been focusing on neuro-inspired architectures for machine learning based on what is currently known about the structure of brain networks.