

Pervasive Artificial Intelligence for 6G Networks

Sergio Barbarossa

CNIT/University Roma La Sapienza, IT

Abstract

6G networks are expected to permeate our environment with a plethora of devices able to deliver intelligent services satisfying stringent delay constraints. In this talk, after presenting a broad vision on the need to move beyond classical Shannon paradigm toward semantic and goal-oriented communications, I will present a number of research activities centred on the application of the so called relational inductive bias paradigm in machine learning, to show how classical learning methods can improve exploiting the structure of the data or any other prior information. Special focus is given to graph-based representations and their higher order generalization, graph neural networks and dynamic resource allocation strategies, based on stochastic optimization, aimed to optimize radio and computational resources jointly.

Bio



Sergio Barbarossa received his MS and Ph.D. EE degree from Sapienza University of Rome, where he is currently a Full Professor and a Senior Research Fellow of Sapienza School for Advanced Studies (SSAS). He is an IEEE Fellow and a EURASIP Fellow. He received the IEEE Best Paper Award from the IEEE Signal Processing Society in 2000, 2014, and 2020 and served as an IEEE Distinguished Lecturer in 2013-2014. He received the 2010 Technical Achievements Award from the European Association for Signal Processing (EURASIP) society. He has been the scientific coordinator of several European projects. His research interests include 5G networks, edge machine learning and topological signal processing.