

第1回研究領域セミナー

(コンピューティング科学研究領域)

テーマ

“Lossy Multi-terminal Cooperative Networks, Queueing, and Decision Making: Erlang, Shannon, and Neyman-Pearson Meet in 6G Networks”

講演者: 本学名誉教授 松本 正 氏 Life Fellow, IEEE

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日 時: 令和5年5月30日(火) 14:30~17:00

場 所: 情報科学講義棟大講義室 及び オンライン(Webex)

講演要旨: The primary objective of this seminar is to provide the participants with *outline knowledge* of the project, Internet-Of-Things network Analysis and Design base on the Chief Executive Officer problem (IoTAD-CEO), funded by a French Funding program, COMIN-Labs, and its achievements. Network Information Theory is an extension of Shannon's Information Theory to Networks. The IoTAD-CEO project focuses on the three component technologies, Distributed Multi-terminal Lossy Cooperative Networks, Queueing System and Decision Making towards successful development of new mobile wireless communications system concept. The IoTAD-CEO project has considered how the technological and theoretical framework should be modified so that it can be best-suited to mobile wireless communications over fading multiple access channels (MACs) with Queueing systems in the presence of massive wireless devices. The reason for the focus on lossy communications is because even with distortions included in the recovered multi-terminals' transmitted information at the data center, still appropriate solutions can be obtained by pre-trained Artificial Intelligence (AI) and/or Machine Learning (ML) systems. This concept is referred to as *Erlang, Shannon, and Neyman-Pearson Meet in 6G Networks*. The IoTAD-CEO project does not use AI systems as a black box tool. The project models the decision-making part by Distributed Hypothesis Testing (DHT) where the pre-training period is regarded as the process for determining empirical probability distribution to be used in DHT. The system concept includes wireless mesh networks, relay communications, sensor networks, Internet-of-Things (IoT) Vehicle-to-Things (V2X) networks, and Centralized Radio Access Network (C-RAN).

講演者略歴: Dr. Tadashi Matsumoto received his Ph.D in electrical engineering from KEIO university, Japan, in 1991. After his industry experiences in NTT and NTT DoCoMo, he moved to Center for Wireless Communications, University of Oulu, Finland in 2002. In 2007, he joined JAIST, Japan, where he served as a Professor in Information Science. After his retirement from JAIST at 2021, he has been serving as an invited Professor, IMT-Atlantic, France, where he is a Chair of IoTAD-CEO Project.

Dr. Amin Zribi received his Ph.D degree in ICT jointly from IMT Atlantique, France and University Tunis El Manar, Tunisia. He joined the Higher Institute of Communication Technologies (IsetCom) where he is now Assistant Professor, and has served as head of the ICT Department from 2017 to 2020. In 2012, he joined the MEE Department at IMT Atlantic, France as Associate Researcher. His research interest is in the field of source and channel coding design for wireless networks. Particularly, his expertise includes image and video compression, and joint source-channel coding applied to Lossy/Lossless cooperative wireless networks.

会場での聴講を希望される方または学外の方で参加を希望される方は下記お問合せ先までご連絡ください。

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