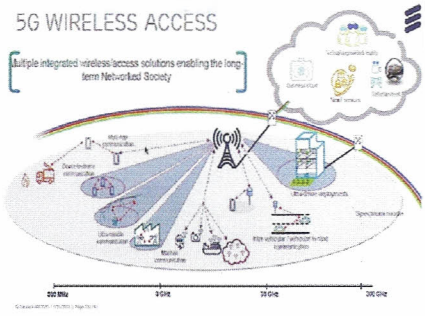
Organized by Department of Electrical Engineering, IIT Kanpur
Feb 19th-21st, 2018

Short Course on Game Theory and Competitive Strategies for 4G/ 5G Wireless Networks



Important Dates

Course Dates
Feb 19th - 21st, 2018

Last Date for Registration
Feb 5th, 2018

Venue

Seminar Hall,
Pioneer Batch Building,
Visitor s Hostel,
IIT Kanpur

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Game theory is a novel framework to model the strategic interaction between multiple competing agents with widespread applicability. Even though it has been known for decades to successfully solve problems involving competition and strategy formulation, it is only recently that the power and utility of such techniques has begun to attract the attention of professionals and researchers working towards the development of cutting-edge wireless technologies. By mathematically capturing the behaviour of agents with conflicting interests in strategic situations, such as users/ devices in a wireless network, Game Theory presents a powerful tool for optimal resource allocation to enhance the performance of wireless networks. Techniques in game theory have been successfully applied in several areas of wireless communication such as 3G/ 4G wireless cellular networks, MIMO/ OFDM wireless technologies, Cognitive Radio and several others, with several researches underway towards exploring its utility in 5G wireless systems.

This short course aims to provide participants with a comprehensive treatment of the game theoretic approach with specific emphasis on applications and research in modern 4G/ 5G wireless systems. The course is intended to serve the dual purpose of being a technical introduction for participants at all levels, including B.Tech/ M.Tech / Ph.D. students, faculty members and professional engineers, while simultaneously demonstrating the techniques and latest research aimed towards solving key issues in wireless research. The participants will be introduced to a wide spectrum of challenging research problems arising in wireless networks, such as Multi-user MIMO-OFDM networks, Multi-antenna Beamforming, Power Control in Wireless Networks, Cognitive Radio, Spectrum Auction/ Management and several others, that can be successfully solved using Game Theory. Tutorial problem discussion sessions will also be held to further enhance understanding. Further, a MATLAB demonstration and participation module is also planned to help students implement and understand Game Theory techniques for their research in wireless technology.

Target Audience

- Ph.D./B.Tech/M.Tech students interested in Game Theory and its applications .
- Engineers and Industry Professionals
- ECE/EEE Faculty of Government and Private Engineering Colleges/Universities.

For more details and registration information, visit the website
http://www.iitk.ac.in/mwn/gt/