

学术报告会

时间：2021年11月12日（周五）16:00-17:00

地点：电院群楼2-410会议室

Nash Equilibrium Learning for Multi-Cluster

Games

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Abstract:

This talk discusses the distributed strategy design for Nash equilibrium (NE) seeking in multi-cluster games under a partial-decision information scenario. In the considered game, there are multiple clusters and each cluster consists of a group of agents. A cluster is viewed as a virtual noncooperative player that aims to minimize its local payoff function and the agents in a cluster are the actual players that cooperate within the cluster to optimize the payoff function of the cluster through communication via a connected graph. In our setting, agents have only partial-decision information, that is, they only know local information and cannot have full access to opponents' decisions. To solve the NE seeking problem of this formulated game, a discrete-time distributed algorithm, called distributed gradient tracking algorithm (DGT), is devised based on the inter- and intra-communication of clusters. In addition, considering time-varying payoff functions and constraints, a novel distributed online learning algorithm for seeking NE is proposed. It is shown that the presented algorithm can achieve sublinear bounded dynamic regrets and constraint violation.

个人简介:

孟敏，同济大学“青年百人”特聘研究员，博士生导师。山东大学博士，南洋理工大学博士后，曾多次访问香港大学、香港城市大学。为中国自动化学会第六届“青年人才托举工程”、上海市浦江人才计划入选者，中国自动化学会青年工作委员会、女科技工作者工作委员会委员，中国自动化学会、中国指挥与控制学会、中国人工智能学会等会员。主持国家自然科学基金一项。长期从事布尔网络、分布式博弈与优化、分布式安全估计与控制等研究，在控制权威期刊 IEEE TAC、Automatica 等上发表多篇学术论文。