

图论组合与网络研究中心

Center for Graph Theory, Combinatorics and Networks

学术报告

题目： Approximate Group Fairness for Clustering

报告人： Dr. Bo Li, Hong Kong Polytechnic University

时间： 7月3日（星期一） 14:00 – 15:00

地点： 数学院南楼 N620

摘要： We incorporate group fairness into the algorithmic centroid clustering problem, where k centers are to be located to serve n agents distributed in a metric space. We refine the notion of proportional fairness proposed in [Chen et al., ICML 2019] as core fairness, and a k -clustering is in the core if no coalition containing at least n/k agents can strictly decrease their total distance by deviating to a new center together. Our solution concept is motivated by the situation where agents are able to coordinate and utilities are transferable. A string of existence, hardness and approximability results is provided. Particularly, we propose two dimensions to relax core requirements: one is on the degree of distance improvement, and the other is on the size of deviating coalition. For both relaxations and their combination, we study the extent to which relaxed core fairness can be satisfied in metric spaces including line, tree and general metric space, and design approximation algorithms accordingly.

报告人简介： Bo Li is currently an assistant professor in the Department of Computing at the Hong Kong Polytechnic University. Formerly, he was a Postdoctoral Fellow in the Department of Computer Science at University of Oxford and in the Department of Electrical and Computer Engineering at University of Texas at Austin. He received his PhD in Computer Science from Stony Brook University. He is broadly interested in algorithms, AI and computational economics, including problems related to resource allocation, game theory, online algorithms, and their applications to Blockchain and machine learning.