

On Stars and Galaxies: Exploiting Social Influence in Networks

Eyal Winter

12 May 2022

Eyal Winter (Hebrew University of Jerusalem and Lancaster University), 17:15 - 18:45, presents his work in the Interdisciplinary Research Seminar of the GRK "Collective Decision-Making".

The seminar will take place in-person at [Von-Melle-Park 9](#), room S28. The seminar is also live-streamed on Zoom. Please register (if you haven't already) [here](#) if you want to attend the seminar. We invite everyone interested to attend!

Abstract

We study mechanisms that exploit social influence in networks to coordinate agents to act. Agents' social benefit from taking action increases with any additional friend who acts. On top of the social benefits, the principal offers external rewards to sustain a unique Nash equilibrium where everyone acts. We first show that in the influence mechanism that minimizes the principal's expenses, popular agents receive preferential treatment from the principal. We use this observation to identify networks that are most favourable for the principal to induce action. Such networks, "galaxies", partition nodes into core and periphery, with every core node being linked to all nodes, and every periphery node being linked only to core nodes. We discuss the relevance of this finding to social media platforms (such as Facebook and Twitter) in terms of manipulating the network, as well as to regulators who would attempt to prevent such manipulation.