Department of Computer Science, The University of Hong Kong

CS Seminar

Content Recommendation for Viral Social Influence

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Date:
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Thursday
1:30 pm

Venue:
Rm 308
Chow Yei Ching Building
The University of Hong Kong

Abstract:

How do we select content that will become viral in a whole network after we share it with friends or followers? Significant research activity has been dedicated to the problem of strategically selecting a seed set of initial adopters so as to maximize a meme's spread in a network. Yet this line of work assumes that the success of such a campaign depends solely on the choice of a tunable set of initiators, regardless of how users perceive the propagated meme, which is fixed. Yet in many real-world settings, the opposite holds: a meme's propagation depends on users' perceptions of its tunable characteristics, while the set of initiators is fixed.We address the natural problem that arises in such circumstances: Suggest content, expressed as a limited set of attributes, for a creative promotion campaign that starts out from a given seed set of initiators, so as to maximize its expected spread over a social network. To our knowledge, no previous work addresses this problem. We find that the problem is NP-hard and inapproximable. As a tight approximation guarantee is not admissible, we design an efficient heuristic, Explore-Update, as well as a conventional Greedy solution. Our experimental evaluation demonstrates that Explore-Update selects near-optimal attribute sets with real data, achieves 30% higher spread than baselines, and runs an order of magnitude faster than Greedy.

About the Speaker:

Panagiotis Karras (Panos) is an Associate Professor in Computer Science at Aarhus University. In his research he designs robust and versatile methods for data access, mining, and representation. He earned an MEng in Electrical and Computer Engineering from the National Technical University of Athens and a PhD in Computer Science from the University of Hong Kong. Has has been awarded with a Hong Kong Young Scientist Award, a Lee Kuan Yew Postdoctoral Fellowship at the National University of Singapore, a Teaching Excellence Fellowship at Rutgers Business School, and a Best Faculty Performance Award at the Skolkovo Institute of Science and Technology. Panos' work has been published in venues such as VLDB, KDD, SIGMOD, ICDE, SIGIR, and WWW, and cited over 2000 times. He regularly serves as a PC member and referee for major conferences and journals in those areas.

All are welcome!
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