

Department of Systems Engineering and Engineering Management

Seminar Series

Advertising over Social Networks: A Game Theory Approach

Ms Qi Qi

(PhD Candidate, Stanford University, USA)

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| Date: | 19 January, 2012 (Thur) |
| Time: | 2:30pm (Tea reception at 2:15pm) |
| Venue: | B6619 (SEEM/MBE Conference Room) |

Abstract

It has been a challenge to build a successful mechanism for social network advertising while search advertising has enjoyed rich literatures. In this talk, I explore the differences between these two types of advertising and propose a solution for social network advertising including allocation and pricing protocols and polynomial time implementable property. First, I discuss some key concepts in search engine advertising, including its successful business model, the allocation and pricing rules used on major search engines, the forward looking Nash equilibrium that I proposed and its applications, as well as the relationship with the VCG protocol. Next, I consider the issues and the corresponding solution in social networks. I propose a concept of forwarding power. Based on this concept, I develop a polynomial time algorithm to find a revenue maximization solution by convex optimization.

Further, I develop the pricing rule utilizing the revenue maximization problem by incentive analysis, and prove the truthfulness of the mechanism. I will conclude this talk with my future research goals.

About the Speaker

Ms Qi Qi received the B.S. degree in Mathematics and Mphil degree in Computer Science from City University of Hong Kong. She currently is a Ph.D. candidate in the department of Management Science and Engineering at Stanford University. She expects to graduate in June 2012. Her research interests include Optimization, Mathematical Programming, Equilibrium Computation, Game Theory and Market Design, and their applications in resource allocation, conflict resolution, revenue management and e-commerce.

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All are welcome!

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