Title: Dynamic Matching in School Choice: Efficient Seat Reallocation after Late Cancellations

Speaker: Ms. Irene Y. Lo
Candidate for Ph.D. in Operations Research (IEOR), Columbia University, New York

Date: 11 January 2018 (Thursday)
Start Time: 10.30 am   End Time: 11.45 am (including Q&A)

Venue: Seminar Room, E1-06-04, Faculty of Engineering Blk 1, 6th floor

Abstract:

As market design theory increasingly shapes the design and operations of real-life marketplaces, it is important for designers to provide simple policy levers that practitioners can use to optimize platform objectives.

In the school choice market, where scarce public school seats are assigned to students, a key operational issue is how to reassign seats that are vacated after an initial round of centralized assignment. Practical solutions to the reassignment problem must be simple to implement, truthful, efficient and fair while also alleviating costly student movement between schools.

In this talk, I will propose and axiomatically justify a class of reassignment mechanisms, the Permuted Lottery Deferred Acceptance (PLDA) mechanisms. Our mechanisms generalize the commonly used Deferred Acceptance (DA) school choice mechanism to a two-round setting and retain its desirable incentive, fairness and efficiency properties. School choice systems typically run Deferred Acceptance with a lottery number assigned to each student to break ties in school priorities. I will show that under natural conditions on demand, correlating the tie-breaking lotteries across rounds preserves allocative welfare, and reversing the first-round lottery order minimizes reassignment among all PLDA mechanisms. Empirical investigations based on data from NYC high school admissions support our theoretical findings.

This is based on joint work with Itai Feigenbaum, Yash Kanoria and Jay Sethuraman.

Biography:

Irene Lo is a 5th year Ph.D. student in the Industrial Engineering & Operations Research department at Columbia University, advised by Jay Sethuraman, Jacob Leshno and Yash Kanoria. Her main research interests are in operational and algorithmic issues in marketplace design, particularly in using theory to provide practical solutions for markets with social value. Her current focus is on operational challenges in school choice mechanisms. She is also interested in platform-based marketplaces, mechanism design for social good, graph theory, and games on networks. She graduated from Princeton University in 2013 with an A.B. in mathematics.