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Title: A faster and simpler algorithm for computing market equilibrium.

Abstract: Devanur, Papadimitriou, Saberi, and Vazirani recently published the first polynomial time algorithm for computing an equilibrium for the linear utilities case of the market model defined by Fisher. Here we provide a much faster and simpler algorithm. In addition, we provide the first strongly polynomial time algorithm for computing the equilibrium. (This latter algorithm is not as simple.) We describe our algorithms from an economic perspective in a way that is accessible to a general audience.

This work is joint with Mehdi Ghiyasvand.

Short Bio

James Orlin specializes in network and combinatorial optimization. He has developed or co-developed faster algorithms for several fundamental problems in network optimization including the shortest path problem, the maximum flow problem, the global minimum cut problem, and the minimum cost flow problem. He has helped develop improved solution methodologies in airline scheduling, railroad scheduling, logistics, network design, telecommunications, inventory control, and marketing. Together with MIT Sloan colleague Thomas L. Magnanti and Ravindra K. Ahuja, he has written the text *Network Flows: Theory, Algorithms, and Applications*, which was awarded the 1993 Lanchester Prize by INFORMS as the best publication in Operations Research in 1993.

Monday, November 09, 2009
Wozniak Lounge (Soda Hall)
4:00-5:00

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