

Editor’s Introduction

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I am delighted to introduce Issue 10.3 of SIGecom Exchanges. This issue features one book announcement, seven research letters, a puzzle, and a solution to the *Baffling Raffling* puzzle of Issue 10.1.

The first contribution in this issue is an announcement of the book “Human Computation” by Law and von Ahn. The book is an attempt to better define human computation as a research area, review existing work in this area, draw connections to a wide array of disciplines, and suggest promising research directions.

The seven featured letters cover a variety of topics: mechanism design for information propagation, dynamic auctions, pricing in social networks, security games, incentive-compatible machine learning, prediction markets, and matching theory.

Babaioff, Dobzinski, Oren, and Zohar present mechanisms that incentivize information propagation over a network when nodes receiving the information compete for the same prize. Using Bitcoin, a peer-to-peer electronic currency system, as an example, they characterize reward schemes that incentivize information propagation, are Sybil-proof, and have little payment overhead.

Iyer, Johari, and Sundararajan examine dynamic auctions with learning bidders. They use a mean field equilibrium concept as an approximation method to simplify the analysis, and manage to show the existence of a mean field equilibrium under mild conditions, characterize a simple, optimal strategy for bidders in a mean field equilibrium, and establish a dynamic version of the revenue equivalence theorem.

Candogan, Bimpikis, and Ozdaglar study optimal pricing in social networks for products that exhibit a local network effect. They investigate a monopolist’s pricing problem in three different settings — the monopolist can use perfect price discrimination, set a single uniform price, or offer either a full price or a discounted price to each agent.

Vorobeychik investigates security games when security failures are interdependent. He describes both a centralized approach, where an attacker can optimally attack one of the interdependent assets and a centralized defender needs to decide on a security strategy, and a decentralized approach, where defenders make local security decisions while the failures are random.

Meir and Rosenschein report recent advances in strategyproof machine learning, describing the capabilities and limits of strategyproof classification algorithms. In particular, they establish connections between strategyproof classification, facility location, and mechanism design without money.

Ellis and Sami discuss a semester-long experiment on using prediction markets as a classroom learning tool. They report that although no significant improvement in students’ enthusiasm or extent of topical reading was found, students reading more broadly at the course start were more likely to trade actively in the prediction market.

Hatfield and Kominers survey recent work in generalized matching theory with a focus on trading networks with transferable utility. They note an interesting parallel between trading networks with discrete contractual opportunities and those with continuously adjustable participation levels. They highlight key conditions — substitutability for the former and concavity for the latter — under which stable outcomes exist, are in the core, and correspond to competitive equilibria.

Finally, there are the puzzles. Our Puzzle Editor, Daniel Reeves, brings the *Contingency Exigency* puzzle. This puzzle asks how to fairly pay an honest worker contingently for a job that has uncertain outcomes. McAfee contributes *Baffling Raffling Debaffled*, a solution to the *Baffling Raffling* puzzle from Issue 10.1. He points out that the puzzle is a special case of a Cournot problem and not only provides a solution but also proves its uniqueness. (No correct solution has been received yet to the *Borrowing in the Limit as Our Nerdiness Goes to Infinity* puzzle from Issue 10.2.)

I would like to thank our Information Director, Felix Fischer, who has once again been very helpful in putting this issue together.