

Editors' Introduction

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This issue of SIGecom Exchanges, we are excited to present an expanded edition which combines the Fall 2023 and Spring 2024 issues. On the news side, this issue celebrates the 2024 slate of job candidates with the annual list of candidate profiles. This is followed by a report on the SIGecom 2024 Winter Meeting, which includes talk summaries and interviews with invited speakers. On the research side, the issue includes five research letters, three annotated reading lists, and three surveys.

The 2024 SIGecom Job Candidates Profiles are compiled by Vasilis Gkatzelis and Jason Hartline. This is the ninth year of this wonderful annual tradition. In addition, we have the 2024 Market Design Job Candidate Profiles, compiled by Yannai Gonczarowski, Assaf Romm, and Ran Shorrer. This is the fourth annual collection from this community. Both sets of profiles have been available since Fall 2023, and for completeness we include them in this expanded Spring 2024 issue. Many thanks to Vasilis, Jason, Yannai, Assaf, and Ran for their service to the community in creating these collections each year.

A highlight of the issue is the report on the fourth SIGecom Winter Meeting, written by graduate students Aghaheybat Mammadov, Emily Ryu, and Roberto Saitto. The event took place virtually in February 2024 and was on the topic of behavioral models. The report features an excellent collection of event summaries and speaker interviews. The summaries are comprehensive and cover all the events at the meeting: introductory talks by Jon Kleinberg and Ori Heffetz, a fireside chat with Noam Nisan and Al Roth, and spotlight talks by Modibo Camara, Ryan Oprea, Gali Noti, and Nicole Immorlica. Interviews with Noam Nisan, Modibo Camara, and Nicole Immorlica provide additional insight on what inspired the research ideas presented in the talks, promising areas for future research, as well as lesser-known fun facts about each interviewee.

This issue of SIGecom exchanges includes five research letters, which highlight several of the award-winning papers from EC 2023, as well as exciting emerging areas of research.

—Giacomo Lanzani, winner of the 2023 EC Best Paper with a Student Lead Author Award, provides an intriguing letter discussing connections between Decision Theory and Computer Science. He uses his EC'24 paper as an illustration of how questions in the former can be addressed using methods from the latter: specifically, how evaluation criteria from computer science can help characterize appropriate dynamic decision criteria for an agent who wants a decision rule that

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is robust to uncertainty and model misspecification.

- A letter from Simon Finster, Michelle González Amador, Edwin Lock Francisco Marmolejo Cossio, Evi Micha, and Ariel Procaccia summarizes their paper which was awarded the 2023 EC Exemplary Applied Modeling Track Award. This paper studies the optimal use of pooled testing for diverse populations during pandemics, considering individual infection probabilities and utility for in-person activities. The authors find that non-overlapping testing allocations, which are simpler to implement, are near-optimal and effective in practice. They also successfully pilot a practical application of utility-weighted testing in a real-world setting.
- Wenshuo Guo, Nika Haghtalab, Kirthevasan Kandasamy, and Ellen Vitercik provide an overview of their paper which received the 2023 EC Exemplary Artificial Intelligence Track Award. The paper considers algorithmic learning in a pricing problem where buyers depend on reviews for information about the product. The introduction of reviews adds a new dynamic to the seller’s learning problem: in addition to the usual explore-exploit tradeoff inherent in online pricing, the algorithm now needs to ensure that there are sufficient reviews to allow buyers to infer their values. Only with enough reviews can the seller accurately infer demand and set prices well. The paper gives algorithms with tight theoretical regret bounds.
- A research letter from Piotr Dworcak considers the problem of inequality-aware market design. Drawing on two of his recent papers, he provides a simple framework for designing regulation and other policies to ensure equitable redistribution in markets with asymmetric or imperfect information. He also presents multiple directions for future research that will be of broad interest in the EC community.
- Nicole Immorlica, Brendan Lucier, and Alex Slivkins conclude the letters section with a position piece on generative AI. They observe that a main application for AI technologies is as *consultant* or *agent*, often reducing the costs of information acquisition or making certain tasks easier. At the same time, though, these technologies need not have objectives that are directly aligned with the decision-maker. The authors argue that these applications are excellent opportunities to apply and further develop our understanding of delegation and related topics in contract theory. The piece suggests fascinating avenues for future research.

For readers looking for directed summer reading, this issue also includes annotated reading lists on three great topics.

- A reading list from Keegan Harris and Vasilis Syrgkanis provides an introduction to the growing area of causal inference in the presence of strategic agents. The reading list includes seminal papers from statistics and econometrics, as well as recent papers bringing in tools from machine learning and game theory.
- Omer Lev, Harper Lyon, and Nicholas Mattei give a guided tour of the literature on peer selection. This is an area of mechanism design without money that has seen a recent burst of interest. A group of agents must select one or more of their own to serve in an elected role or receive an award. The goal is to design mechanisms that select a worthy candidate in a non-manipulable way.

—An annotated reading assortment from Will Ma serves as an excellent primer for members of our community interested in the problem of assortment optimization. The goal is to identify assortments of products to show customers (whose choices are given by parametric choice functions) to maximize expected revenue. The assortment includes seminal papers, new choice models, online variants of the problem, as well as future directions that may be of interest to our readers.

Finally, the issue includes three excellent research surveys.

- Bo Waggoner and Raf Frongillo provide a short but highly informative overview of the area of information elicitation. The aim is to design scoring and reward functions to incentivize accurate reporting of statistical properties by an informed agent. For both single- and multi-agent problems, they highlight both unsolved technical questions and connections to other fields of interest.
- Zhiyi Huang, David Wajc, and Zhihao Gavin Tang give a thorough survey of the very deep literature on online matching. They walk us carefully through a wide range of variants, and highlight the best-known algorithms for each. The survey includes an appendix with a “teachable moment:” a lesson-length analysis of the well-studied Balance algorithm for fractional online matching.
- Members of the EC community working at Google provide a comprehensive survey of auto-bidding and auctions in online advertising. They define the problem space, and identify the main challenges faced by the bidding agent and auctioneer. They then survey recent literature addressing each of these challenges: for agents, how to bid optimally in various settings; and for auctioneers, equilibrium outcomes and auction design. The survey closes with explorations of multiple emerging topics, including determining the utility functions of autobidders, identifying the effects of multiple advertising channels, and findings from empirical studies of different auction formats.

Many thanks to Yannai Gonczarowski for his help in putting together this issue, and thanks to our contributors for their efforts and expertise. As always, please continue to volunteer letters, surveys, annotated reading lists or position papers. We hope you enjoy this expanded issue and find inspiration in the rich and varied research areas being explored by members of our community!