

Report on YoungEC 19

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We present a report on the second Young Research Workshop on Economics and Computation (YoungEC 19) held in Tel Aviv, Israel on December 31, 2019–January 2, 2020, highlighting the aspects that make this event unique from other workshops in the community.

Categories and Subject Descriptors: [**Theory of computation**]: Algorithmic game theory and mechanism design; J.4 [**Computer Applications**]: Social and Behavioral Sciences—*Economics*; I.2.11 [**Distributed Artificial Intelligence**]: Multiagent Systems

General Terms: Algorithms, Economics, Theory

Additional Key Words and Phrases: Workshops

1. INTRODUCTION

In the spring of 2019, organizers Michal Feldman and Noam Nisan sent out a call to researchers for recommendations of brilliant young researchers—advanced graduate students and postdocs—from computer science, economics, operations research, game theory, and related areas. On December 31, twenty-seven such junior researchers, broadly diverse by research area, university, and geographic area, arrived at Tel Aviv University in Israel for the 2019 Young Researcher Workshop on Economics and Computation (YoungEC 19). The three-day workshop was centered around the junior researchers, including 25 minute slots for each participant to present their work, five 45 minute keynotes by senior researchers, and numerous breaks and activities planned for interaction among participants—all of which were also attended by keynote speakers and other faculty who were eager to engage with the young researchers. Generous funding from the European Research Council made it possible to cover almost all expenses for the young researchers, removing barriers to attendance.

2. THE YOUNG RESEARCHER EXPERIENCE

Each of the 27 junior researchers were given a 25 minute slot to present their research, giving them a chance to introduce themselves and their work, and consequently receive feedback and initiate research discussions. The young researchers included: Omer Ben-Porat (Technion IE&M), Ben Berger (Tel Aviv U CS), Arpita Biswas (IISc Bangalore), Lee Cohen (Tel Aviv U CS), Andrés Cristi (Universidad de Chile OR), Yuan Deng (Duke CS), Alon Eden (Harvard CS), Tomer Ezra (Tel Aviv U CS), Kira Goldner (Columbia CS), Yannai Gonczarowski (Microsoft Research), Zi Yang Kang (Stanford GSB), Ron Kupfer (Hebrew U CS), Bar Light (Stanford GSB), Giorgio Martini (Microsoft Economics), Divya Mohan (Princeton CS), Ellen Muir (Stanford Economics), Neil Newman (UBC CS), Gali Noti (Hebrew U CS), Rebecca Reiffenhauser (Sapienza U Rome CS), Steffen Schuldenzucker (U Zurich

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Informatics), Ariel Schwartzman (Princeton CS), Elisheva S. Shamash (Technion IE&M), Weiran Shen (CMU Software Research), Segev Shlomov (Technion IE&M), Yixin Tao (NYU CS), Yifeng Teng (UW-Madison CS), Ellen Vitercik (CMU CS), and Shuran Zheng (Harvard CS).

As participants learned about one another’s work from these talks, they followed up with questions or discussions at breaks, using the opportunities both to get feedback and make further connections to their own research. Even the bus rides to and from the conference—including those at 8 a.m.—were full of research dialogues between seatmates. Neil Newman, a third-year student in computer science at the University of British Columbia echoed these sentiments, “It was exciting to hear what problems others were focusing on and to gain feedback on my own work.” Shuran Zheng, a third-year student in computer science at Harvard, also commented on how the presentation experience and feedback helped: “I was more nervous because it was a less familiar audience, but it went well. I also got some very good suggestions about presentation skills.”

Having such a diverse group that broadly represents the field of Economics and Computation allowed the participants to gain exposure to other aspects of EconCS that they may not typically learn about in their own institutions and to get up-to-date on recent exciting work. Shuran mentioned this aspect as well, “I think it’s really an exciting workshop that gathers the most cutting-edge works in the field of algorithmic game theory as well as economic theory.” She also noted that compared to mostly seeing more AI-related EconCS work at her own university, “It has been very nice to see what people are working on these days. Overall, I think these talks really expanded my knowledge about the theoretical side of economics and computation and the economics world.” Ellen Muir, a third-year student from Stanford Economics echoed this, saying “There were a lot of really high-quality talks presented by young researchers and as an economist, it was great to get a better idea of what computer scientists are currently working on in fields like game theory, mechanism design and auction theory. I also really enjoy these smaller, more intimate workshops where there are plenty of opportunities to talk to other speakers and receive feedback during the many coffee breaks.” The senior researchers also agreed, with Steve Tadelis noting, “It was great to have a mix of computer scientists and economists sharing different approaches and answering a variety of broadly related questions with different tools and techniques. Many of the young scholars have ambitious and creative research agendas!”

The format and focus of the small workshop on young researchers allowed the participants to really get to know each other and form a cohort as up-and-coming researchers in EconCS. Andrés Cristi, a second-year in Operations Research at Universidad de Chile, pointed this out, mentioning that, “I was very excited while giving my talk, because I felt I was speaking to the new generation of researchers in the area. It was a really motivating environment, to see what other students from different places were doing, but also with a relaxed and familiar atmosphere so we could chat about our work and share with young and senior researchers.” Neil Newman agreed, “My favourite aspect was the workshop’s small size and focus on speakers in similar career stages (other advanced graduate students and postdocs) as connections were valuable and easy to make.”

3. SENIOR PRESENCE AT THE WORKSHOP

YoungEC 19 featured five invited speakers—three of whom were flown in from outside of Israel—who participated in the whole YoungEC workshop. They gave 45 minute keynote talks, but also attended the talks of the juniors researchers and engaged in conversations with them over the week. In addition, many local faculty and senior industry researchers, and those in town, attended YoungEC as well.

The five keynotes were delivered by Nina Balcan (Carnegie Mellon CS), Liane Lewin-Eytan (Alexa Shopping at Amazon), Yishay Mansour (Tel Aviv University CS), Paul Milgrom (Stanford Economics), and Steve Tadelis (UC Berkeley Haas School of Business). Steve opened the workshop with his talk “Raising the Bar: Certification Thresholds and Market Outcomes,” which discussed an empirical study of certification thresholds on eBay and their impact on buyer behavior. Paul then surprised attendees of all fields by presenting work on necessary conditions for good approximations in a particular setting: “Investment Incentives in Near-Optimal Mechanisms.” (“Even Paul Milgrom endorses approximation!” became a common joke in later talks.) On the second day, Liane’s talk, entitled “Alexa, Why Do People Buy Seemingly Irrelevant Items in Voice Product Search?” touched on a study as to when and why people engage with objectively irrelevant search results. On the final day, Nina spoke on “Machine Learning for Mechanism Design,” highlighting methods for providing sample complexity bounds, as well as many other applications of these methods. Yishay presented additional learning work, “Exploration, Exploitation and Incentives,” in which he discussed multiple settings where strategic agents interact with a bandit a designer optimizes for, and approaches for each setting.

The keynotes covered a diversity of topics, fields, and touched on both theoretical and applied work. The young researchers were thus able to get a sampling of what the senior participants were working on and find research connections. Shuran Zheng commented, “All the invited talks were very inspiring. It was very impressive to see how Paul Milgrom controlled the time of the talk exactly as he wanted. Some of the students’ talks are more difficult for me to understand, mainly because I’m not familiar with the topics. As for my own talk, [...] I got some very nice feedback and questions about the work, including some comments from Moshe Babaioff, who is one of the authors of the paper I followed up.”

4. BENEFITS OF LOCATING IN TEL AVIV

The fact that YoungEC 19 took place in Tel Aviv, Israel had many benefits for the young researchers and the other attendees. The area surrounding Tel Aviv is arguably one of the most academically-dense regions, particularly for EconCS, with all of the top five universities of Israel within an hour. Hence many faculty, grad students, and even prospective students of these universities were able to attend YoungEC.

One such attendee was Tomer Manket, who had recently finished his masters and was in the process of determining if, where, and in what topic he would pursue a PhD. After the workshop, he said, “The YoungEC 19 was the first AGT conference I’ve ever attended, and I’m very glad I had this opportunity. I love the combination of theoretical research and its real-world applications. The exposure to the great

young researchers inspired me to consider this direction in my future studies.”

YoungEC was colocated with TAU Theory-Fest, a six-day conference at Tel Aviv University hosting senior plenary speakers broadly within theoretical computer science, including Christos Papadimitriou and Vijay Vazirani. The Theory-Fest also included six sub-workshops, of which YoungEC was one. This enabled the many Theory-Fest participants to attend some of the YoungEC workshop, and for the YoungEC participants to take advantage of TAU Theory-Fest.

The workshop’s location included other benefits as well—an incredible workshop dinner with Israeli food, the opportunity to celebrate New Year’s Eve in Tel Aviv, and a tour of historic sites in Jerusalem the day after the workshop. The tour included sites of importance to various religions, with the history of how control has passed from different group to different group over time. Shuran commented, “The trip to Jerusalem was a wonderful bonus. My knowledge about the history was a total blank before that.” Neil agreed about the benefits of the location, “Highlights (aside from the great talks) included a group tour of the old city of Jerusalem and sampling Israeli cuisine (shawarma, falafel, sabich, café hafuch, etc.)” It’s likely that all attendees would agree that the workshop contained perfect talks, opportunities for interaction, and coffee.