

Seminar: Algorithmic Game Theory / Advanced Topics in Economics and Computation

- Kick-off Meeting -

Dr. Paolo Penna
Prof Dr. Sven Seuken
22.2.2017

Agenda

- Goals of the Seminar
- Some Logistics
- Quick Presentation of Topics/Papers
- Next Steps
- Questions

Goals of the Seminar

- Get a deep understanding of an advanced topic/paper in algorithmic game theory/economics and computation
- Focus on one technical paper (not an overview of ten papers!)
- Give a talk on this paper + lead discussion
- Act as a buddy to another student (also read paper, give feedback)

Prerequisites

- Successful completion of one of the following courses:
 - Algorithmic Game Theory (Penna/Dütting/Widmayer)
 - Economics and Computation (Seuken)
- If you have not successfully completed one of these courses, but believe to have the necessary knowledge (in algorithmic game theory, mechanism design, social choice theory, etc.), please talk to one of the instructors after class to get explicit permission!

Attendance Limitation

- We will present 13 topics
- If too many students want to take the seminar, we will choose randomly among all students, maintaining a balance among students from ETH and UZH

Preferences on Topics and Buddies

- We will put the list of topics online later today
- You will get the chance to submit your preferences on topics (and on topics for which you want to be a buddy)
- We will use RSD to assign 1) topics and 2) buddies

List of Topics/Papers

Paper Number	Details
1	Computational Complexity and Information Asymmetry in Financial Products. Sanjeev Arora, Boaz Barak, Markus Brunnermeier, and Rong Ge. (ICS 2010) https://users.cs.duke.edu/~rongge/derivativelatest.pdf Further Information, including extended abstract: https://users.cs.duke.edu/~rongge/publications.html ; click the “abstract” button for even more info.
2	Chinese College Admissions and School Choice Reforms: A Theoretical Analysis. Yan Chen and Onur Kesten (J. Political Economy 2017) http://www.journals.uchicago.edu/doi/pdfplus/10.1086/689773
3	Fault tolerant mechanism design. Ryan Porter, Amir Ronen, Yoav Shoham, Moshe Tennenholtz. (Artificial Intelligence 2008) http://ai.stanford.edu/~shoham/www%20papers/FTMD%20Journal.pdf
4	Payment rules through discriminant-based classifiers. Dütting, P., Fischer, F., Jirapinyo, P., Lai, J.K., Lubin, B. and Parkes, D.C. (TEAC 2015) http://paulduetting.com/pubs/ec12-conf.pdf
5	Optimal Auctions through Deep Learning. Paul Duetting, Zhe Feng, Harikrishna Narasimhan, David Parkes (working paper).
6	Fixed and Market Pricing for Cloud Services. Vineet Abhishek, Ian A. Kash, Peter Key (CoRR 2012) https://arxiv.org/abs/1201.5621 Previous, shorter version: https://arxiv.org/pdf/1201.5621v1.pdf
7	Sink equilibria and convergence. Goemans, Michel and Mirrokni, Vahab and Vetta, Adrian (FOCS 2005) http://dl.acm.org/citation.cfm?id=1097452
8	On the Computational Complexity of Optimal Simple Mechanisms. Aviad Rubinfeld (ITCS 2016) http://dl.acm.org/citation.cfm?id=2840736
9	Bidding Strategies for Fantasy-Sports Auctions. Aris Anagnostopoulos, Ruggiero Cavallo, Stefano Leonardi, Maxim Sviridenko. (WINE 2016) http://link.springer.com/chapter/10.1007/978-3-662-54110-4_8
10	Towards Large-Scale Deliberative Decision-Making: Small Groups and the Importance of Triads. Ashish Goel, David T. Lee (EC 2016) http://dl.acm.org/citation.cfm?id=2940722
11	Truthful Facility Assignment with Resource Augmentation: An Exact Analysis of Serial Dictatorship. Ioannis Caragiannis, Aris Filos-Ratsikas, Soren Kristoffer Stiel Frederiksen, Kristoffer Arnsfelt Hansen, Zihan Tan (2016) https://arxiv.org/abs/1602.08023v1
12	Truthful Mechanisms for Matching and Clustering in an Ordinal World. Elliot Anshelevich, Shreyas Sekar (WINE 2016) https://arxiv.org/abs/1610.04069v2
13	Stochastic uncoupled dynamics and Nash equilibrium. Sergiu Hart, Andreu Mas-Colell (Games and Economic Behavior 2006) http://www.sciencedirect.com/science/article/pii/S0899825605001478

Next Steps (1/4): Assignment of Topics

- We will put these slides online on my teaching website within next 2 hours: <http://www.ifi.uzh.ch/ce/teaching/spring2017/seminar.html>
- Until today (22.2.2017), 23:59, send an email to Steffen Schuldenzucker (schuldenzucker@ifi.uzh.ch) containing the following information:
 - Name
 - Matrikelnummer (ETH/UZH)
 - Completion of AGT/E&C course (when?) or explicit consent of instructor?
 - Ordinal preferences for topics, with indifferences (e.g., 3a, 3b, 3c):
 - 1) Number of Topic A
 - 2) Number of Topic B
 - 3a) Number of Topic C
 - 3b) Number of Topic D
 - 3c) Number of Topic E
 - 4) Number of Topic F
- Tomorrow, we will use the Random Serial Dictatorship (RSD) Mechanism to assign topics to students
- We will send you your assigned topic, + the list of all assigned topics

Next Steps (2/4): Assignment of Buddies

- Within 24h, you need to confirm your participation in the seminar!
- Additionally, you need to send us your buddy topic preferences from among the list of all topics that were given out, using the same format as before.
- We will again use RSD to assign buddies, and send you your buddy topic assignment
- All assignments will also say who is the advisor for that topic (Dr. Penna, Prof. Seuken, or a PhD student or postdoc)

Next Steps (3/4): Preparing a Manuscript + Talk

- Read your paper (and related papers to understand the main paper)
- Write manuscript (~10 pages), like a „speaker’s manuscript“, i.e., how would you present it during the seminar (e.g., motivation, formal model, selected most interesting proofs)
→ see <http://www.ifi.uzh.ch/ce/teaching/spring2017/seminar.html> for details!
- **Send your manuscript to your buddy + to the advisor (Prof. Widmayer, Prof. Seuken, PhD student/postdoc) 4 weeks before your talk**
- **Meet with advisor and buddy ~3 weeks before your talk to receive feedback**
- Meet with buddy to do practice talk and receive additional feedback on manuscript and practice talk
- **Until the seminar day: submit final version of manuscript!**
- Give talk (20min) + lead discussion (10min), either on (will be assigned by us):
 - Friday, 19.5.2016, 12:30 - ca. 18:00: location: tba
 - Saturday, 20.5.2016, 9:00 - ca. 15:00: location: tba
- Participate actively in the discussions of the other talks

Next Steps (4/4): Acting as a Buddy

- Read the paper of your buddy
- Read the manuscript of your buddy before the meeting with the advisor
- In the meeting, show that you have a good understanding of the paper and the manuscript, and give feedback on the manuscript!
- Later, meet again with buddy, give more detailed feedback on manuscript, attend practice talk, give detailed feedback on practice talk, and on slides, etc.
- Be active in the discussion part of the seminar

Grading will be based on

- Presentation: 40%
- Manuscript: 30%
- Buddy: 20%
- Seminar participation: 10%

Questions?

- More information:
<http://www.ifi.uzh.ch/ce/teaching/spring2017/seminar.html>
- More questions? → email: schuldenzucker@ifi.uzh.ch
- Some useful pointers:
 - How to read a paper:
 - [Focus questions](#) to help identify the main contributions of a paper, a
 - [Survival kit](#) for reading the technical sections, and a
 - [Three-pass approach](#) to tie it all together.
 - How to give a talk:
 - [These two](#) articles have a number of good suggestions.
 - [This video](#) is pretty good as well.