

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

- Kick-off Meeting -

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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 (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 15 topics
- Total seminar attendance will be limited to 15
- If more than 15 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	Hemenway, Brett, and Sanjeev Khanna. " Sensitivity and Computational Complexity in Financial Networks. " (2015). http://arxiv.org/pdf/1503.07676
2	<i>de Vries, Sven, James Schummer, and Rakesh V. Vohra. "On ascending Vickrey auctions for heterogeneous objects." Journal of Economic Theory</i> 132.1 (2007): 95-118.
3	Unbalanced Random Matching Markets: The Stark Effect of Competition; http://web.stanford.edu/~iashlagi/papers/UnbalancedMatchingAKL.pdf
4	Fault Tolerant Mechanism Design; http://ai.stanford.edu/~shoham/www%20papers/FTMD%20Journal.pdf
5	Fixed and Market Pricing for Cloud Services; http://arxiv.org/pdf/1201.5621v1.pdf
6	The Price of Anarchy in Large Games Games, Feldman, Immorlica, Lucier, Roughgarden, Syrgkanis, http://arxiv.org/abs/1503.04755 , (STOC 2016)
7	Matroids are Immune to Braess' Paradox, Fujishige, Goemanns, Harks, Peis, Zenklusen, http://arxiv.org/abs/1504.07545 , (Working Paper), [Popular press article]
8	An Analysis of One-Dimensional Schelling Segregation, C. Brandt, N. Immorlica, G. Kamath and R.D. Kleinberg., (STOC 2012), http://arxiv.org/abs/1203.6346 , [There is also a nice popular press article]
9	Learning Equilibria of Games via Payoff Queries, Fearnley, Gairing, Goldberg, Savani, http://arxiv.org/abs/1302.3116 , http://dl.acm.org/citation.cfm?id=2886792 , (Journal of Machine Learning Research, 2015)
10	Mechanism design for fair division: allocating divisible items without payments, Cole, Gkatzelis http://dl.acm.org/citation.cfm?id=2482582 , (EC 2013)
11	General Revision Protocols in Best Response Algorithms for Potential Games, P. Coucheney, S. Durand, B. Gaujal, C. Touati, https://hal.inria.fr/hal-01085077/document , (NetGCoop 2014)
12	Convergence to approximate Nash equilibria in congestion games, S. Chien and A. Sinclair http://www.sciencedirect.com/science/article/pii/S0899825609001110/pdf?md5=bd60b7d545c9b8397281eed8affa487d&pid=1-s2.0-S0899825609001110-main.pdf (GEB 2011).
13	Locality-based Network Creation Games D. Bilò, L. Gualà, S. Leucci, G. Proietti http://dl.acm.org/ft_gateway.cfm?id=2612680&ftid=1475720&dwn=1&CFID=585142463&CFTOKEN=89782336 (SPAA 2014)
14	Algorithms, games, and evolution, E. Chastain, A. Livnat, C. Papadimitriou, and U. Vazirani. http://www.pnas.org/content/111/29/10620.full.pdf?with-ds=yes , (PNAS 2014). Note: make sure you download the version with supporting information (7 pages long)
15	Worst-case optimal redistribution of VCG payments in multi-unit auctions. M. Guo and V. Conitzer. http://www.sciencedirect.com/science/article/pii/S0899825608001267/pdf?md5=47b26835fa5ab28734598b4c8557ef3a&pid=1-s2.0-S0899825608001267-main.pdf (GEB 2009).

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/spring2016/seminar.html>
- Until today (24.2.2015), 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) Topic A
 - 2) Topic B
 - 3a) Topic C
 - 3b) Topic D
 - 3c) Topic E
 - 4) 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. Dütting, Prof. Seuken, Prof. Widmayer, or a PhD student)

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/spring2016/seminar.html> for details!
- **Send your manuscript to your buddy + to the advisor (Prof. Widmayer, Prof. Seuken, PhD student) 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, 20.5.2016, 9:00 - ca. 15:00: location: ETH
 - Saturday, 21.5.2016, 9:00 - ca. 15:00: location: UZH
- 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/spring2016/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.