Seminar: Advanced Topics in Economics and Computation

- Kick-off Meeting -

Prof. Sven Seuken & Jakob Weissteiner

19.2.2020

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:
  - Introduction to Market Design (Pycia)
  - PhD Course: Market Design (Pycia)
  - 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, auction theory, mechanism design, matching markets, etc.), please send a mail including **transcripts and short descriptions** of the relevant courses you have taken in this areas to seuken@ifi.uzh.ch and weissteiner@ifi.uzh.ch

Attendance Limitation

- We will present 6 papers
- 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

- 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	**Automated Mechanism Design without Money via Machine Learning** (Supervisor: **Jakob Weissteiner**) https://www.ijcai.org/Proceedings/16/Papers/068.pdf
2	**Continuous Auctions and Insider Trading** (aka "Kyle Model") (Supervisor: **Jakob Weissteiner**) https://www.jstor.org/stable/pdf/1913210.pdf?refreqid=excelsior%3A5d84bc75fb1462aba6e54bc9bf5112b6
3	**Carpooling and the Economics of Self-Driving Cars** (Supervisor: **Ludwig Dierks**) https://web.stanford.edu/~ost/papers/sdc.pdf
4	**Simple versus Optimal Contracts** (Supervisor: **Ludwig Dierks**) https://dl.acm.org/doi/pdf/10.1145/3328526.3329591
5	**Coalition-Based Pricing in Ascending Combinatorial Auctions** (Supervisor: **Vitor Bosshard**) https://pubsonline.informs.org/doi/pdf/10.1287/isre.2016.0681
6	**On Fair Price Discrimination in Multi-Unit Markets** (Supervisor: **Vitor Bosshard**) https://www.ijcai.org/proceedings/2018/0034.pdf

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/spring2020/seminar.html
- Until (20.2.2020), 23:59, send an email to Jakob Weissteiner (weissteiner@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 papers, with indifferences (e.g., 3a, 3b, 3c):
    - 1) Number of Paper A (most preferred)
    - 2) Number of Paper B
    - 3a) Number of Paper C
    - 3b) Number of Paper D
    - 3c) Number of Paper E
    - 4) Number of Paper F (least preferred)
- 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 (Prof. Seuken 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/spring2020/seminar.html for details!
- **Send your manuscript to your buddy + to the advisor (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
- **Two nights before the seminar day: submit final version of manuscript!**
- Give talk (20min) + lead discussion (10min), on
  - Friday, 15.05.2020, between 10:00 – 17:00; location: BIN, Room: 1.D.29
  - Participate actively in the discussions of the other talks
- Notes on giving the talk:
  - It is important that you give the talk „freely“ (do NOT „read“ from the speaker‘s manuscript!!)
  - You can use a whiteboard talk or PPT slides

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/spring2020/seminar.html
- More questions? →email: weissteiner@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.