Seminar Advanced Algorithms and Data Structures

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Agenda

- Goals of the Seminar
- Logistics
- Topics
- Next Steps
- Grading

Goals of the Seminar

- Get a deep understanding of an advanced topic/paper in algorithms/data structures
- Focus on one technical paper/topic (**NOT**: an overview of ten papers!)
- Give a talk on this paper, write a manuscript, lead the discussion
- Act as a buddy to another student (read paper, read report, give feedback)

Prerequisites

Good understanding of:

- algorithms,
- data structures,
- and probability.

Attendance Limitation

- Total seminar attendance will be limited to ~ 30
- If more than 30 students want to take the seminar (**unlikely**), we **might** consider assigning extra topics.

Topics Preference

- Topics are online.
- You should know your preference.
- If not, look at the papers now.
- We will use RSD to assign 1) topics and 2) buddies **during next hour**.

Topics

- hashing,
- algebraic algorithms,
- randomized algorithms,
- distance structure (spanners, shortest paths),
- elementary data structures,
- data streams,
- fine grained complexity.

Next steps (1/3): topics

- We assign you topics today.
- We use RSD to assign topics to students
- We will assign advisors (topic-based) and dates (random/common sense) **later**.
- We publish/send you the list of all assigned topics and advisors.

Next steps (2/3): buddies

- We assign buddies (using common sense), on 17.03.2018.
- Buddy is responsible for quality of his partner talk/manuscript.
- We will make sure to balance speakers/buddies among two Saturdays.

Next steps (3/3): preparing manuscript + talk

- Read your paper (and related papers)
- Write manuscript ($4 - 8$ pages) on how would you present it:
  motivation, formal model, interesting proofs, main results
- Send your manuscript to buddy + the advisor 3 weeks before your talk
- Meet with the advisor and buddy ~ 2 weeks before the talk
- submit final version of manuscript 1 week before the talk (STRICT)
- prepare talk, rehearse with buddy
- talks: blackboard talk (30min) + lead discussion (10min) on:
  - Saturday April 07
  - Saturday April 21
  - Saturday May 12
- NO SLIDES

Grading

In order of importance:

- Presentation
- Manuscript
- Buddy
- Active Participation

Useful link on how to read papers and give talks:
`http://cs.stanford.edu/~rishig/courses/s14.html`