Advanced Topics in Computer Networking (ATCN)
– Social Networks and Cloud Computing –

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Outline

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Objectives

- Basic concepts: Gain experience in **Reading**, **Writing** and **Presenting** research ideas in English
- Learn knowledge about new and emerging research topics and technologies in social networking and cloud computing
- Organize discussions and exchange research ideas/experiences between students and researchers

What we plan to do?

- It's research-oriented. Therefore, the main focus will be paper reading and research discussions.
- It's a *Seminar*, so we will.....*Discuss*, *Discuss* and *Discuss* with prepared reading materials
- Every session, we discuss between two to three papers
- Each participant completes a review form of a paper 2 days prior to the seminar day (i.e., by Wednesday!)
- Final presentations, Q&A
- Final report due 31.03.2012

How to evaluate?

- Part I: Session participation (30%)
  - paper review (15%)
  - session discussion (15%)
- Part II: Final presentation (30%)
- Part III: Final report (40%)

Outline

Schedule

28.10	Session 0: Overview and social networks basis
04.11	(no session)
11.11	Session 1: Social network structure
18.11	Session 2: Strong and weak ties
25.11	(no session)
02.12	Session 3: OSN sampling
09.12	Session 4: Recommend. systems; social nets privacy
16.12	(no session)
06.01	Session 5: Virtualization
13.01	Session 6: Data center network
20.01	Session 7: Energy issues in cloud computing
27.01	Session 8: Mobile cloud computing
03.02	Final presentation I
10.02	Final presentation II
31.03	Final report deadline

Outline

Before the seminar (I): Read a Paper

- Rough round:
  - Read: abstract, introduction, conclusion and first paragraph of the main work
  - Check points: problem statement and rough main idea
- Read in depth:
  - Addressed Problem: a critical or trivial issue?
  - Solution: challenge/verify the credibility of the idea: do the assumption, method, statistics and conclusion sound?
  - Evaluation: theoretical, experiment or simulation? extensive and sufficient results?

Before the seminar (II): Write a Review

- Summary of the paper
- Strength and weakness of the paper: Please detail the reasons!!
  - Convincing problem statement? A critical issue?
  - Limited novelty or new idea?
  - Solution/Method:
    i. assumption
    ii. deployment
    iii. scalability
    iv. protocol overhead, algorithm complexity
    v. robustness/resilience to failures
    vi. efficiency
    vii. ...
  - Evaluation
    i. benchmark
    ii. performance metric
    iii. simulation/experiment setup
    iv. Convincing results? Sufficiently demonstrated the pros/cons/variants of the solution?
  - Writing: well structured? easy to understand?

During the Seminar

- Lecturer will publish a summary of all participants' reviews, including 5 parts:
  - problem statement
  - method
  - evaluation
  - writing
  - future work
- All the comments are discussed by all the participants.
- The review is provided anonymously
  - so just express your opinions in your review
  - don't worry if you will be criticized with your review

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Final Presentation

- Paper list will be provided before 9.12
- Select a paper in the list before 16.12
- Deadline of submitting slides: 31.01
- Duration: 25-30 minute presentation + 10 minute discussion
- Tips for preparing slides
  - 15-20 pages, BSc/MSc. thesis format
  - Correct citation of others' work (figure, sentence, argument, idea, ...)
  - Get your audiences to quickly understand the idea of the paper
  - Animations, figures and tables are better than wordy sentences
  - Use example to explain complicated algorithms
  - Short sentences
  - Avoid complicated equations
  - Summary of the paper: thinking/justification of the paper in your own words (Bonus)

Outline

Final Report

- Deadline: 31 March
- Objective
  - review the paper and investigate this research field
- A scientific paper including
  - Summary of the selected paper: method and evaluation results
  - Discussion of the paper on how to improve the work or other related directions

Format

- Title
- Abstract: a broad overview of the report, end with a short statement of the major results of your investigation
- Introduction: expands the abstract, get specific about your investigation
- Related work: unlikely invented something completely new
- Overview of the paper: what's important idea of the paper? Bring your reader to the method
- Main results of the paper
- Discussion of the paper: give your opinion on the paper
- Future thoughts along the direction

Where can I find more papers?

- ACM Digital Library, Google Scholar, IEEExplore.
- Cloud computing related: SOCC, SIGCOMM, HotCloud, USENIX ATC, NSDI; IEEE TPDS, Internet Computing
- Social network related: WWW, IMC, SIGKDD, INFOCOM; Nature, more journals and books