Seminar: Advanced Topics in Networked Embedded Systems

Spring Semester 2018

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Organization (1)

- Lead
  - Zimu Zhou, zimu.zhou@tik.ee.ethz.ch
  - Jan Beutel, beutel@tik.ee.ethz.ch
  - Lothar Thiele, thiele@tik.ee.ethz.ch
- Language: English
- Biweekly on Thursday, 10:15 – 12:00
  - 23.02. (exception); 8.03.; 22.03.; 12.04.; 26.04.; 17.05.; 31.05.
- 2 papers per seminar session (45min each)
- Location: ETZ G71.2
- Max. 12 participants (deadline for decision: 02.03.)
- Contact: nesseminar@tik.ee.ethz.ch
Organization (2)

• Participants:
  – Master students, PhDs, postdocs
  – NES PhD students (most are passive listeners)

• ECTS points: 2 credits

• To get credit points you need to
  – Actively participate in all seminar sessions
  – Present 2 papers
  – Review all papers discussed in the seminar
Seminar Goals

• Read, learn, discuss on the
  …Latest technological breakthroughs in NES
  … How to read a scientific paper
  … How to review a scientific paper
  … How to present a scientific paper

• NES PhD students (experts in the field) read papers and participate in the discussion
Seminar Topics

Learn state-of-the-art in the field of NES

• “Hot” topics on networked embedded systems (NES)
  – Smart sensors and novel applications
  – New system designs
  – Communication and network troubleshooting
  – Data mining
  – ...

• Papers selected for the seminar
  – Recent (mostly published in 2017)
  – Published at best conferences (IPSN, SenSys, SIGCOMM, ...)
  – Received best paper awards
  – Represent recent developments in the NES community
Reading a Paper

Learn how to read a scientific paper

• Take notes while reading
• Make sure you understand the paper
  – What is the main contribution of the paper and how does it connect to what has been done before?
  – What is the key idea behind the contribution?
  – What are the assumptions?
  – What are alternative solutions?
  – What are the advantages of the solution described in the paper over existing work? (low cost, new capabilities, …)
• Question on paper content?
  – nesseminar@tik.ee.ethz.ch (describe your question in detail)
Paper Review (1)

Learn how to review a scientific paper

- **Reviewers** are experts in a given field, are asked to give their opinions on the validity, significance, and originality of the findings presented in manuscripts.

- All seminar participants are PC (program committee) members
  - Can review papers and access reviews of other PC members (after having completed your own reviews).

- I will register all seminar participants in the system (done already)
  - Your email address is your username, password will be sent by email.

http://people.ee.ethz.ch/~nescrp/hotcrp/
Paper Review (2)

• Fill out the **review form**
  – Be **critical, specific, constructive**
  – Evaluate different aspects of the paper:
    • Originality
    • Applicability
    • Paper structure
    • …
    – Suggest how to improve the result
    – Come up with a similar idea (or a similar problem)

• **Would you accept the paper as a real reviewer?**
  – Why do you think the paper was accepted?
  – Read on the randomness of the reviewing process: [http://blog.mrtz.org/2014/12/15/the-nips-experiment.html](http://blog.mrtz.org/2014/12/15/the-nips-experiment.html)

• Express your opinion. It can’t be wrong (by definition 😊).
Paper Presentation

Learn how to present a scientific paper

• Slides – are your tools
  – Contact paper authors and ask for slides
  – If not available: copy relevant pieces of the paper or use whiteboard

• Conference style presentation
  – Motivate conducted research
  – Formally state the problem
  – Present key idea, list contributions and comment on originality
  – What has been done before and how the paper advances it?
  – Present main results
  – Comment on applicability of the results

• Rehearse your talk before the seminar (!)
Talk Evaluation

• It might be tough to stand in front of a group and receive critics on your presentation skills ... but
  – It has no influence on whether you pass the seminar
  – It gives you an opportunity to master public speaking and to better know your weak sides
  – Talk rehearsals are common in almost every research group as part of conference preparation
Seminar Preparations

Before Tue  
@All: Read 2 paper to be discussed at the seminar and make sure you understand them

Before Tue, 23:59  
@All: Submit your reviews of the papers to the review system

Before Thu  
@Speakers:  
Read and summarize all reviews. Prepare discussion questions.

Thu, 10:15-12:00  
@All: Actively participate in the seminar

Before Tue  
@Speakers:  
Read paper, request/prepare slides, prepare presentation and rehearse it

Mon Tue Wed Thu Fr
seminar week
Seminar Workflow

Talk (15 mins)
- Conference style presentation
- Formal presentation of the paper

Reviews’ summary (5 mins)
- Consolidate reviews
- Common opinions?
- Different opinions?
- Use reviews to trigger the discussion

Discussion (20 mins)
- Moderate the discussion
- Paper content
  - Paper position in the field
- Paper structure and writing style
  - What can we learn from paper organization?
- Reviews
  - What was the most helpful review (among submitted) and why?
- Open questions and future research directions!!

Evaluation (5 mins) x 2
- Receive feedback on your presentation
Talk Schedule

• Choose 2 papers you wish to present
  – List of papers to choose from is on the seminar homepage
  – Email me your choice by email nesseminar@tik.ee.ethz.ch no later than Monday, 26.02, 4pm.
  – First-come-first-serve paper assignment (“red papers” are taken already)

• I will compile a schedule for the seminar
  – Speakers for the next seminar session will be announced online tomorrow evening (and informed by email)

• Inform me if you have any scheduling conflicts
  – E.g., you plan to miss the seminar due to a conference visit

• If you decide to drop out of the seminar, please inform me Monday, 26.02, 4pm.