Software-Engineering Seminar, Summer 2019

Peter Zeller

AG Softech & AG Programmierprachen
FB Informatik
TU Kaiserslautern
## Supervisors/Participants

<table>
<thead>
<tr>
<th>Topic</th>
<th>Student</th>
<th>Supervisor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Futures and Promises</td>
<td>Sebastian Schweizer</td>
<td>Peter Zeller</td>
</tr>
<tr>
<td>Actors in Scala</td>
<td>Sebastian Schweizer</td>
<td>Peter Zeller</td>
</tr>
<tr>
<td>Mozart</td>
<td>Sebastian Schweizer</td>
<td>Peter Zeller</td>
</tr>
<tr>
<td>Publish/Subscribe</td>
<td>Sebastian Schweizer</td>
<td>Peter Zeller</td>
</tr>
<tr>
<td>Distributed Reactive Progr.</td>
<td>Annette Bieniusa</td>
<td>Ralf Hinze</td>
</tr>
<tr>
<td>Emerald</td>
<td>Annette Bieniusa</td>
<td>Ralf Hinze</td>
</tr>
<tr>
<td>Argus</td>
<td>Annette Bieniusa</td>
<td>Peter Zeller</td>
</tr>
<tr>
<td>Orleans</td>
<td>Peter Zeller</td>
<td>Ralf Hinze</td>
</tr>
<tr>
<td>Cloud Haskell</td>
<td>Annette Bieniusa</td>
<td>Ralf Hinze</td>
</tr>
<tr>
<td>DISTALGO</td>
<td>Annette Bieniusa</td>
<td>Ralf Hinze</td>
</tr>
<tr>
<td>P</td>
<td>Ralf Hinze</td>
<td>Peter Zeller</td>
</tr>
<tr>
<td>IronFleet</td>
<td>Ralf Hinze</td>
<td>Peter Zeller</td>
</tr>
<tr>
<td>Dedalus und Datalog</td>
<td>Peter Zeller</td>
<td>Ralf Hinze</td>
</tr>
<tr>
<td>Delta CRDTs</td>
<td>Peter Zeller</td>
<td>Annette Bieniusa</td>
</tr>
<tr>
<td>PaRiS</td>
<td>Annette Bieniusa</td>
<td></td>
</tr>
</tbody>
</table>
Goals

- Learn about a specific topic in SE
- Read and understand scientific papers/books explaining the topic
- Learn how to present the topic
Your tasks

- Read and understand the material we provided
- Search for additional material on the topic
- Write a paper
  - Language: English (Bachelor: may be in German)
  - Use our Latex template
  - 10-15 pages (Bachelor: 7-15 pages)
  - Easy to read for other students
  - Present the problem and motivation of the work
  - Present the solution
  - You may add critique

- Presentation
  - 20 minutes presentation
  - about 20 minutes discussion and questions (know your topic!)
  - participate in discussion
Seminar topic: Distributed and Concurrent Programming

Difficulties:
- Concurrency, order, time, determinism
- Partial failures
- Limited resources, performance, scalability
- Security & correctness
- Changes in topology, code, etc.

Your topics:
- Programming techniques and models
- Runtime techniques and protocols
- Ensuring correctness
Schedule

- **Introduction:** May 13
- **First draft of paper:** June 17
- **Presentations:** Wednesdays, 11:45-13:15
  - June 5: Emerald; Argus
  - June 12: Futures and Promises; Mozart
  - June 19: Actors in Scala; Orleans
  - June 25: Publish/Subscribe; Cloud Haskell
  - July 3: Dedalus and Datalog; Distributed Reactive Programming
  - July 10: DISTALGO; P; IronFleet
  - July 17: Delta CRDTs; PaRiS
- **Final paper:** July 15

All deadlines: End of the day 23:59.
Submissions: As pdfs by email to your supervisor and coordinator
First submission: Introduction

1. A motivation/problem statement, which explains what the topic and scope of the paper is and what problem it tries to solve.
2. A brief statement about what approach/methods were used.
3. A summary of the results/contributions
4. No technical details necessary yet.
First draft and final paper

- Your paper should target other students in the seminar
- Be understandable
- Add context
- Explain in your own words

First draft:
- Full paper including everything you want to have in the final paper

Final paper:
- Incorporate feedback from first draft
- Polish paper
How to fail a seminar?

- Plagiarism
- Late submissions
- Not attending final presentations
- Poorly written paper
  - Fail to convey the concepts
  - Incomprehensible English
- Bad presentation
  - Fail to convey the concepts
  - Unable to answer any questions
- Never talk to your supervisor
- Do not use a spell checker
Next steps

- Talk to your supervisor
- Write introduction