Outline

- Why do we need this course?
- What is the course about?
- Course administrative information
Current trends in SOC and Cloud

- Advanced service models for Internet of Things (IoT)/cyber-physical systems

- IoT and cloud integration → IoT cloud systems

- Cloud and service technologies for Fog, Edge-centric and mobile-edge computing

- Social-cyber-physical clouds

- Analytics services atop big data infrastructures
Complex requirements and SOCloud focus

- Some key issues
  - High availability, data sharding, geographical multi-cloud load balancing, automatic formation of on-demand data centers
  - Horizontal scalability in big data, elasticity coordination in multi-cloud environments, elasticity algorithms for fog and network function virtualization (NFV)
  - Algorithms for large-scale data ingest/big data.
  - Performance monitoring and analysis

- Gaps between theoretical concepts and practical applications of advanced algorithms and techniques
We **study and explore** complex algorithms and techniques in SOC, Cloud, Fog/edge, and Big data systems.

It is a kind of “advanced distributed systems” focused SOC, Cloud, and fog/edge systems.
SOCloud – relevant courses

- Advanced Internet Computing
  - Give you some advanced technologies about SOC, Cloud Computing and (business) processes/workflows

- Advanced Services Engineering
  - Focus on services engineering techniques for IoT and clouds

- Distributed Systems Technologies:
  - Give you fundamental distributed technologies and how to use them
Course administration (1)

- Lectures are held through the whole semester
  - But not every week – check the course website!

- Who could participate in the course?
  - Master students in advanced stages (e.g., seeking for master thesis) in informatics and business informatics
  - PhD students: normal PhD track, PhD School of Informatics, and Doctoral Colleges
  - Students should have knowledge about fundamental distributed systems, internet computing and distributed computing technologies
Course administration (2)

- Learning methods
  - Discussion, individual and team work, literature and practical studies

- Evaluation methods
  - Assignments and a final examination

- Assignments
  - 3 home assignments resulting in some analysis summaries and discussions

- Oral final exam
Grades

- Assignments: 60 points
- Final oral examination: 40 points

<table>
<thead>
<tr>
<th>Point</th>
<th>Final mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100</td>
<td>1 (sehr gut)</td>
</tr>
<tr>
<td>75-89</td>
<td>2 (gut)</td>
</tr>
<tr>
<td>56-74</td>
<td>3 (befriedigend)</td>
</tr>
<tr>
<td>40-55</td>
<td>4 (genügend)</td>
</tr>
<tr>
<td>0-39</td>
<td>5 (nicht genügend)</td>
</tr>
</tbody>
</table>

Failed? → retake the final oral examination part!
THANKS! ANY QUESTION?
Thanks for your attention

Hong-Linh Truong
Distributed Systems Group
TU Wien
truong@dsg.tuwien.ac.at
http://dsg.tuwien.ac.at/staff/truong