



FACULTY OF
COMPUTER SCIENCE

Networked Systems Lab / Seminar / Theses Introduction

Prof. Dr. David Hausheer



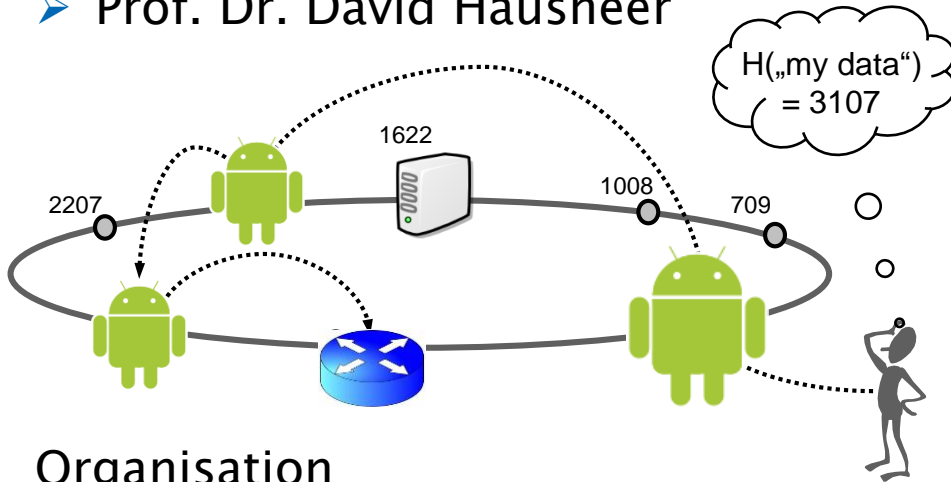
Networks and Distributed
Systems Lab (NetSys)

Kickoff am 11.10.2018
13:15h G02 Raum 111

Praktikum Vernetzte Systeme

Dozent:

- Prof. Dr. David Hausheer



Organisation

- Individual- oder Team-Projekt
- 6 Kreditpunkte = 180h

Voraussetzungen

- Studenten im MSc CV/INF/INGINF/WIF
- Solide Programmiererfahrungen
- Komm. und Netze wird empfohlen



Interesse? Weitere Infos unter:
<http://www.netsys.ovgu.de/>

Inhalte, u.a.:

- Software-defined Networking
- Network Functions Virtualization
- Netzwerk Sicherheit
- P2P und Overlay Netze
- Mobile Netze, Video Streaming
- Energy-effiziente Netze
- Netzwerk Simulation
- Oekonomische Aspekte

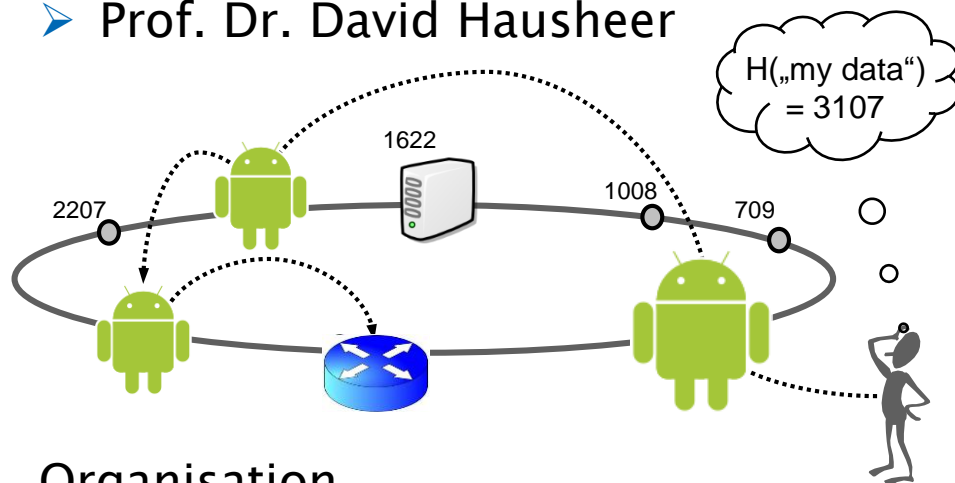
Lernergebnisse

- Design & Entwicklung von Anwendungen in Kommunikationsnetzen
- Anwendung von objektorientierten Programmieretechniken

Seminar Vernetzte Systeme

Dozent:

- Prof. Dr. David Hausheer



Organisation

- Wissenschaftliches Seminar
- 3 Kreditpunkte

Voraussetzungen

- Studenten im MSc CV/INF/INGINF/WIF
- Kommunikation und Netze wird empfohlen



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Lernergebnisse

- Literatursuche, Klassifizierung, Evaluation, Vergleich
- Bericht (6–10 Seiten) und Präsentation (20–30min) einer Literaturstudie

Topics (1): SCION – A Secure Internet Architecture

- ❖ Virtual Credit based Incentive Mechanism for SCION (T, L)
- ❖ Extension of the SCIONLab Coordination Service (T, L)
- ❖ Design and Evaluation of SCION Multi-path over GEANT Topology (T, L)
- ❖ Bandwidth Measurements as a Basis to Evaluate SCION (T, L)
- ❖ Comparison of SCION with Segment Routing (S)
- ❖ Design and Evaluation of Multi-path Large File Transfer over SCION (T, L)
- ❖ Comparison of MP-QUIC with other Multi-path Approaches (S)
- ❖ Usage Scenarios und Requirements of Secure Internet Architectures in the Telecommunications-Industry (S)
- ❖ Automatic Deployment of SCION on Small Scale Devices (L)
- ❖ Implementation of a SCION App for Android Smartphones (T, L)
- ❖ Performance Evaluation of SCION on Small-Scale Devices (T, L)
- ❖ Design and Analysis of IoT Applications on SCION (T, L)
- ❖ SCION as a Platform for Smart Home Environments (T, L)

Topics (1): SCION – A Secure Internet Architecture

- ❖ Evaluation of SpeedCam: Monitoring of Multipath Resource Usage (T)
- ❖ Machine-Learning based Performance Prediction in SCION (T, L)
- ❖ Deployment of SCION on Baremetal Switches (T, L)
- ❖ Network Function Virtualization Support for SCION (T, L)
- ❖ Deployment of SCION in the Linux Kernel (T, L)
- ❖ Does Multi-path lead to more resource usage? (T, S)

Topics (2): Distributed Systems and Overlays

- ❖ Secure Mobile Fog Computing for Critical Applications (T, S)

Topics (3): Software-defined Networking (SDN)

- ❖ Developing an SDN Lab with the Zodiac FX Switch (L)

Organization

- ❖ This week: Write me an e-mail to hausheer@ovgu.de with:
 - Topics you are interested (may be multiple, in order of preference)
 - Type (Lab, Seminar, Thesis)
 - Individual- or Teamproject
 - Name(s) of involved person(s)

- ❖ Next week: Make an appointment with me to discuss the topic and initiate the work and register with the exam office (in case of lab work)

- ❖ Deadlines:
 - Presentations will take place after the end of the semester
 - Reports (+ Code) have to be handed in a week prior to the presentation (<td>)
 - A preliminary version needs to be handed in for feedback (<td>)

- ❖ Templates:
 - Presentation template will be provided later
 - Report template: IEEE Template for Transactions
http://www.ieee.org/publications_standards/publications/authors/author_templates.html#sect1

Requirements

❖ Report

- Team projects: 5 pages for 1 person, 5,5 pages for 2 persons, 6 pages for 3 persons
- Seminar work: xxx

❖ Presentation

- Team projects: 20min (+5–10min demo)
- Seminar work: 20–30min (+15min discussion)

❖ Exam registration

- To be done with the corresponding exam registration form
- To bring with you for my signature, once the presentation date is fixed

❖ Plagiarism

- Please take care to correctly reference other work and dont copy/paste content from other documents
- **Reports will be checked for plagiarism and plagiarism will be reported**