



Prof. Anja Feldmann, Ph.D.

# Network Architectures: Internet Routing (Seminar)

Preparatory Meeting

Technische Universität Berlin

Intelligent Networks / Intelligente Netze (FG INET)

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# Overview

- Seminar
- Timeline
- Contact
- Topics

# Seminar

2 SWS / 3 LP

Exam: talk and paper

Prerequisites:

- Advanced knowledge in computer networks
- Sufficient skills in **scientific English**

# Intention of the Seminar

- ❑ Work with scientific literature independently
- ❑ In-depth study of current research topics
- ❑ Understand academic publishing processes
- ❑ Practice professional/scientific speaking

# Seminar Certificate

To receive the seminar certificate we require:

- ❑ A successful presentation/talk
- ❑ A seminar paper accepted by us
- ❑ Continuous attendance and active participation and contribution
  - In the group meetings
  - During the presentations

# Seminar Content

- Recent findings and scientific insights concerning Internet routing, e.g.:
  - Routing Protocols
  - Interdomain Routing
  - Peer-to-Peer networks
  - Network Architecture
  - Data center networks

# Timeline

Preparatory  
Meeting  
Oct 21st



End of Semester

Talks



# Timeline: Registration

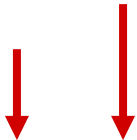
Registration until Oct 28<sup>th</sup> (16:00h)

Select Topics via ISIS (web): “INET IR Sem (WS 16/17)”

<https://isis.tu-berlin.de/course/view.php?id=8633>

(If you don't have an ISIS account, send an email  
**As Soon As Possible!**)

Registration  
Oct 28<sup>th</sup> (16:00h)





# Timeline: Topic Choices

Announcement of assigned topics:  
by end of Oct 31<sup>st</sup>

Topic <-> Student matching via web and email

Announcement of  
assigned topics  
Oct 31<sup>st</sup>



# Timeline: Topic Elaboration

- Elaborate the topic
  - Search for additional literature
  - Read and understand it
  - Send short structural draft to supervisor

Topic Elaboration  
Nov 4<sup>th</sup> (23:55h)



# Timeline: Meeting

Meeting with supervisor by Nov 18<sup>th</sup>

Your short structural draft will be used as a discussion basis.

Meeting until  
Nov 18<sup>th</sup>

A horizontal red line represents a timeline. Two red arrows point downwards from the line. The first arrow is on the left. The second arrow is further to the right, and the text "Meeting until Nov 18<sup>th</sup>" is positioned above it.

# Timeline: Literature Summary

- Summarize literature in a seminar paper
  - 10 pages (DIN A4 PDF)
  - Guidelines for writing:
    - <http://www.inet.tu-berlin.de/menue/teaching0/infoteaching/seguide/#292501>
  - Until Dec 9<sup>th</sup>

Seminar Paper  
Dec 9<sup>th</sup> (23:55h)



# Timeline: Peer Review



- ❑ Read and correct the seminar paper of other participants in the group
  - Guidelines are linked on seminar web page
- ❑ Subsequently: Exchange comments in a **group meeting** (attendance is mandatory!)
  - Appointment will be discussed for every group

Peer Review  
Approx. Jan 6<sup>th</sup> – Jan 13<sup>th</sup>



# Timeline: Paper Revision

Incorporate results of the group meeting into a seminar paper

Final Seminar Paper  
Jan 20<sup>th</sup> (23:55h)



# Timeline: Slides

- ❑ Start to prepare slides after Jan 20<sup>th</sup>
- ❑ Send first version of your slides and meet with your supervisor, until Feb 3<sup>rd</sup>


First Draft Version of  
Slides  
Jan 27<sup>th</sup> (23:55)h



# Timeline: Slides

- ❑ Incorporate comments of supervisor in slides
- ❑ Send the final version until Feb 10<sup>th</sup>

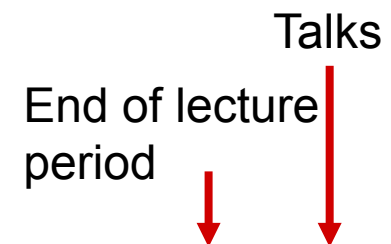
Final Version of Slides  
Feb 10<sup>th</sup> (23:55h)

A horizontal red line represents a timeline. Two red arrows point downwards from the line. The first arrow is on the left side. The second arrow is on the right side, pointing to the text 'Final Version of Slides Feb 10th (23:55h)'.



# Timeline: Talks

- Talks will be given after the lecture period (Vorlesungszeit)
  - Blockseminar: 2-3 days
  - Present the paper
  - 45 min incl. discussion per talk (30 mins talk)



# Timing in General

- ❑ Deadlines are fixed and hard!
  - (-0.3 penalty/day of delay on the final mark)
- ❑ Organize yourself
  - Appointments with your supervisor
  - Group discussions
  - etc...
- ❑ Discuss schedule in advance
  - Vacation is no excuse!

# Topics

- ❑ 24 recent papers
- ❑ Listed on the seminar page
- ❑ Given Literature is a starting point
  - Additional research is required!

# Forum

- ❑ Discussion Forum for students on the ISIS website. (for student internal discussion)
- ❑ Separate News Forum for announcements on our behalf.

# Contact

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# Papers

# End-User Mapping: Next Generation Request Routing for Content Delivery

# Bobtail: Avoiding Long Tails in the Cloud



# Inter-Technology Backscatter: Towards Internet Connectivity for Implanted Devices

# Beacon-Based Routing Optimization in Data-Gathering in Wireless Sensor Networks

# Don't Mind the Gap: Bridging Network-wide Objectives and Device-level Configurations

# Central Control Over Distributed Routing

# CONGA: Distributed Congestion-Aware Load Balancing for Datacenters

# Condor: Better Topologies Through Declarative Design

# BlindBox: Deep Packet Inspection over Encrypted Traffic

# A Distributed and Robust SDN Control Plane for Transactional Network Updates



# Presto: Edge-based Load Balancing for Fast Datacenter Networks

# Enabling End-host Network Functions

# Inside the Social Network's (Datacenter) Network

# InterTubes: A Study of the US Long-haul Fiber-optic Infrastructure

# An Empirical Reexamination of Global DNS Behavior

# Jupiter Rising: A Decade of Clos Topologies and Centralized Control in Google's Datacenter Network

# Examining How the Great Firewall Discovers Hidden Circumvention Servers

# Hypercube-Based Multipath Social Feature Routing in Human Contact Networks



# Detecting Malicious Activity with DNS Backscatter

# Large-scale Measurements of Wireless Network Behavior

# R2C2: A Network Stack for Rack-scale Computers

# From .academy to .zone: An Analysis of the New TLD Land Rush

# Poptrie: A Compressed Trie with Population Count for Fast and Scalable Software IP Routing Table Lookup