

MeshLab (WiSe 2009/2010)

Lecture 0: Organization

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http://www.net.t-labs.tu-berlin.de/teaching/ws0910/ML_labcourse

Winter Semester 2009

General information (1)

- ❑ Module: MINF-KT-NA/ML.W09
- ❑ Structure
 - Tutorials (Recommended)
 - Thursday: 16:00 – 18:00 English TEL 1118/19
 - Assignments (Compulsory)
 - Debriefings (Compulsory)
 - TBA – based on constraints
- ❑ For registration, news and discussion forums, submissions:
 - <https://www.isis.tu-berlin.de/course/view.php?id=2475>

General information (2)

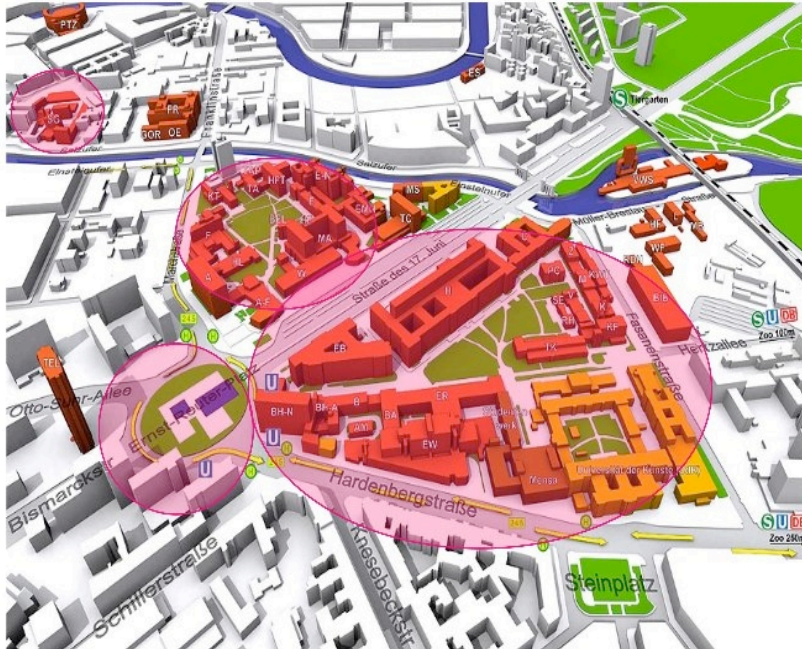
□ Prerequisites:

- Basic studies/Grundstudium on
 - Network Protocols and Architectures (by Prof. Feldmann)
 - Telekommunikationsnetze (by Prof. Wolisz)
- Basic knowledge of Linux

□ Highly desirable:

- Good knowledge of Linux 😊
- English language
- Programming experience

General information (3)



- ❑ Who are we?
 - BOWL group
- ❑ Tutors
 - Çiğdem Şengül
 - Ruben Merz
- ❑ Other supervisors
 - Mustafa Al-Bado
 - Thomas Hühn
 - Harald Schiöberg

BOWL - <http://bowl.net.t-labs.tu-berlin.de/>

- ❑ A reconfigurable wireless outdoor testbed with 50 nodes
- ❑ The network can be configured both as an infrastructure and a mesh network
- ❑ Indoor network for smaller or not-ready-to-be-tested-outside experiments ← you will be using this 😊

Goals of the course

- ❑ Learn the unique challenges of wireless networking
- ❑ Understand wireless protocols at different layers of the network stack
 - Focus is on wireless physical layer concepts, MAC and routing
- ❑ Hands-on experience in BOWL indoor wireless network
 - Implementing algorithms
 - Measurements

Course Structure

- ❑ Tutorials - **Recommended**
 - Around 7 lectures spread out throughout the semester
 - Assignments are handed out
 - Information necessary to complete the assignments is given
- ❑ Assignments - **Compulsory**
 - Teams of 2
 - Duration of 1-3 weeks
- ❑ Debriefings – **Compulsory**
 - Selected teams describe their solutions

Assignments/Examples

- ❑ Experiments to understand wireless concepts
- ❑ Examples:
 - Can you recreate a hidden terminal scenario?
 - What is RTS/CTS? Do we need it or not?
 - How are transmission rate and transmit power related?
- ❑ Assignments will use BOWL indoor network
 - Some assignments on ns2 and ns-click simulator

Tentative Outline

- ❑ Tools of the trade (Weeks 1-2)
- ❑ Measurements (Week 3)
- ❑ IEEE 802.11 protocol (Weeks 4-5)
- ❑ Ns2 – nsclick (Weeks 6-7)
- ❑ Transmit rate adaptation algorithms (Weeks 8-9)
- ❑ Wireless routing algorithms (Weeks 10-11)

Collaboration

- ❑ Each team must complete the assignments **independently** of other groups
- ❑ You **must** collaborate with your team partner

Reading

- ❑ Tutorial hand-outs and reading list in assignments
- ❑ Schiller:
Mobile Communications. Addison-Wesley, 2003
- ❑ Rappaport:
Wireless Communications: Principles and Practice.
Prentice Hall, 2002
- ❑ Kurose and Ross:
Computer Networking: A Top-Down Approach. Addison
Wesley, 3rd edition, 2007.
- ❑ ... see Web

After you leave this room

- ❑ If we called out your code name after the test, register for the course
 - 12 people – 6 teams in total will be selected to register
- ❑ During registration
 - Check your available times for debriefings
 - Put down the name of your team partner
 - If you could not find anybody we will pair you with someone

Job announcement

- ❑ Development of management tools for the BOWL test-bed
- ❑ Responsibilities
 - Enhancing our Ruby/Postgresql based management tool suite
 - Rewriting legacy Perl applications in Ruby
 - Building a Ruby on Rails based web front-end
- ❑ Requirements
 - Good programming skills
 - Good understanding of relational databases
 - Solid understanding of Linux and basic administrative tools
 - Basic web technologies
 - Good English skills
- ❑ Contract
 - 80h/month, limited to June 2010 (may be extended)
 - Flexible working hours
- ❑ Contact
 - Harald Schiöberg – harald@net.t-labs.tu-berlin.de