

Lecture

Pervasive Computing

Chapter 0: Organization

Bernhard Rinner



Institute of Networked and Embedded Systems

Lecture: Pervasive Computing

- Aims of the lecture
 - Provide an introduction to the innovative topics of pervasive computing
 - Focus on **technological aspects**
 - Discuss applications and “non-technical” issues
- Curricula
 - **New curriculum:** Information and Communications Engineering Catalogues: „NC Advanced“ and „ICE Supplement“
 - **Old curriculum:** Information Technology (Master) (first course for) specialization in “**Pervasive Computing**”
- Teaching method
 - Lecture
 - **Accompanied by a lab course**

Lecture: Pervasive Computing

- Related master lectures (selected)
 - Sensor Networks (incl. lab)
 - Wireless Networks
 - Digital Signal Processors (incl. lab)
 - Network Simulation Lab

- Prerequisites/recommended bachelor courses
 - Computer Organization
 - Computer Networks
 - Programming

Outline

1. Introduction & Motivation
2. Trends and Enabling Technologies
3. Wireless Personal Networking
4. Localization
5. Identification
6. Context-Awareness
7. Sensor Networks
8. Wearable Computing
9. Cooperation
10. Middleware Systems
11. Presence and Future (non-technical issues)

Course Material

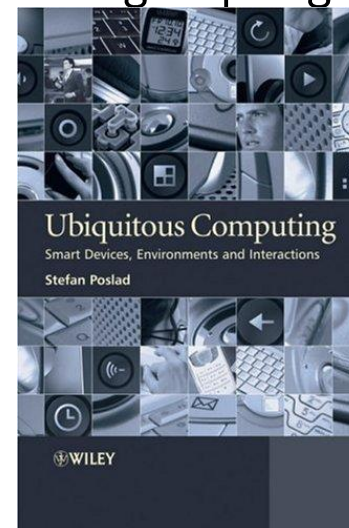
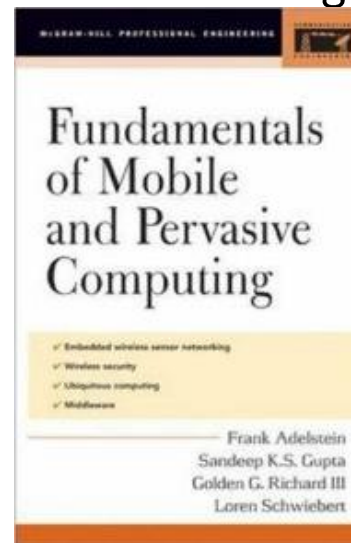
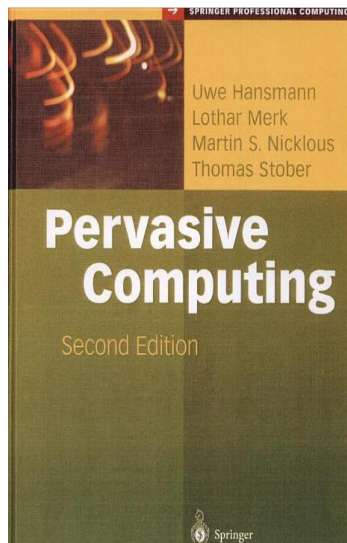
- Course web site: <http://nes.aau.at>
 - Lecture slides
 - Auxiliary material (papers, links etc.)
 - Self evaluation and sample exam
 - Most documents are password-protected

- Schedule
 - Two teaching units per week
 - Check AAU Campus site for details on schedule and rooms

PerComp – Selected Literature

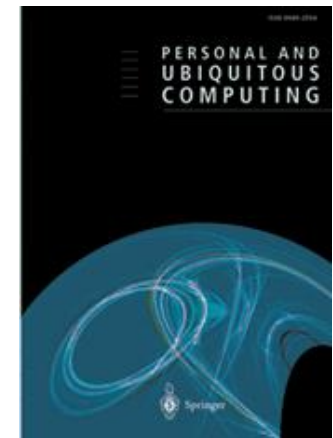
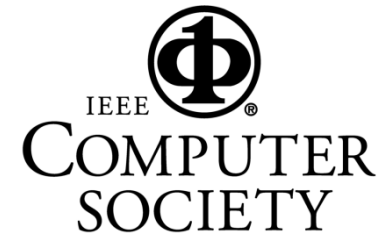
- Books

- Hansmann et al. “Pervasive Computing”, Springer, 2003
- Adelstein et al. “Fundamentals of Mobile and Pervasive Computing”, McGraw-Hill, 2005
- Poslad. “Ubiquitous Computing”, Wiley 2009
- Mattern. “Die Informatisierung des Alltags. Springer 2007



Research Literature

- Journals/Magazines
 - IEEE Pervasive Computing
 - IEEE Transactions on Mobile Computing
 - Personal and Ubiquitous Computing (Springer)
- Conferences
 - Intern. Conference on Ubiquitous Computing
 - Intern. Conference on Pervasive Computing
 - IEEE Intern. Conf. on Pervasive Computing and Communication (Percom)



Case Study Presentations

- Presentation **by students**
 - Teams of 2
 - 15 minutes total presentation time (including discussion)
 - Provide summary (3-4 pages) and presentation slides
- Selection of topics
 - Topics will be announced on November 2, 2017
 - Topic selection until November 9, 2017
 - **First come, first served**
 - Open for **your topic proposals** (via e-mail)
 - Planned day for presentations: January 2018
 - Dates will be chosen by the lecturer depending on the topic

Case Study Presentations

- For each topic you will get a scientific paper or some other description **as a starting point**
 - Additional research via, e.g., IEEE Xplore, ACM, Google Scholar, ... (don't use Wikipedia as a primary source)
- Presentation is **mandatory**
 - Accounts for the overall grading
 - Final written exam needs to be passed
- Presented topics are **relevant for written exam** (for others)
 - Summaries and presentation slides are made available on course site

Examination

- Grading composed by two components
 - Presentation of the assigned/approved topic
 - Written exam at end of semester
- Written exam (75 minutes)
 - Can only be taken, if student has successfully presented the assigned topic in that semester
 - No documents allowed
 - Answers either in English or German
 - Sample exam available at course site
- Overall grade composed of student presentations (25 %) and written exam (75 %)

Bernhard Rinner

E: bernhard.rinner@aau.at

W: <http://nes.aau.at>