Syllabus for TDT48 Mobile Application Development

In total 132 pages.

Challenges and requirements of mobile computing (35 pages):

- George H. Forman and John Zahorjan, **"The Challenges of Mobile Computing"**, IEEE Computer Magazine April 1994, 10 pages.
    - Fundamental paper that describes the challenges of mobile computing. Some parts are outdated, but most of the content is valid to day.
- Alf Inge Wang, Carl-Fredrik Sørensen, Hien Nam Le, Heri Ramampiaro, Mads Nygård, and Reidar Conradi: "**From Scenarios to Requirements in Mobile Client-Server Systems**", book chapter in Designing Software-Intensive Systems: Methods and Principles, editor Pierre F. Tiako, Information Science Reference, June 2008, ISBN: 978-1-59904-699-0, 25 pages.
    - A framework for discovering and analyzing system requirements in mobile systems.

Mobile application frameworks/technologies (18 pages):

- Sumi Helal, **"Pervasive Java"**, IEEE Pervasive Computing Magazine, January-March 2002, 4 pages.
    - A technical overview of Java2 Micro Edition (J2ME)
- Craig Neable, **"The .NET Compact Framework"**, IEEE Pervasive Computing Magazine October-December 2002, 4 pages.
    - A technical overview of .NET compact framework.
- Edwin A. Hernandex, **"War of the Mobile Browsers"**, IEEE Pervasive Computing, vol.8, no.1, Jan/Mar 2009, 4 pages.
    - Technologies for mobile web.
- Mark H. Goadrich and Michael P. Rogers, "**Smart Smartphone Development: iOS versus Android"**, SIGCSE'11, March 9-12, 2011, 6 pages.
    - Overview and comparison of iOS and Android platforms

Mobile application challenges: Wireless networks, performance and energy consumption (49 pages):

- Oliver Amft and Paul Lukowicz, **"From Backpacks to Smartphones: Past, Present, and Future of Wearable Computers"**, IEEE Pervasive Computing, vol. 8, no. 3, 2009. 6 pages
    - Presents the past, present and future of wearable computing
- Nico Maibaum and Thomas Mundt, **"JXTA: A Technology Facilitating Mobile Peer-To-Peer Networks"**, Proceedings of the International Mobility and Wireless Access Workshop (MobiWac'02), 2002, 7 pages.
    - Presentation of a technology to handle mobile peer-to-peer networks.
- Alf Inge Wang: **"Mobile Peer-to-peer Collaborative Framework and Applications"**, book chapter in Mobile Peer-to-Peer Computing for Next Generation Distributed Environments: Advancing Conceptual and Algorithmic Applications, Edited by Boon-Chong Seet, Information Science Reference, May 2009, 26 pages.
    - Describes a peer-to-peer framework for mobile phones using J2ME and Bluetooth.
- Jason Flinn, SoYoung Park, and M. Satyanarayanan, **"Balancing Performance, Energy, and Quality in Pervasive Computing"**, in Proceedings of the 22nd International Conference on Distributed Computing Systems (ICDCS'02), 2002, 10 pages.
    - Presentation of a technology to handle limited performance and energy of mobile application on mobile devices.

Context/Location-awareness (30 pages):

- Anind K. Dey and Greogory D. Abowd, **"Towards a Better Understanding of Context and Context-Awareness"**, Workshop on The What, Who, Where, When, and How of Context-Awareness as a part of the 2000 Conference on Human Factors in Computing Systems (CHI 2000), 12 pages.
    - Defining the concepts context, context-awareness and context-aware applications.
- Mike Hazas, James Scott and John Krumm, **"Location-Aware Computing Comes of Age"**, IEEE Computer Magazine, February 2004, 3 pages.
    - Presents an overview of location sensing technologies and how they can be used.
- Alf Inge Wang, Carl-Fredrik Sørensen, Steinar Brede, Hege Servold, Sigurd Gimre: "**The Nidaros Framework for Development of Location-aware Applications**", IFIP TC8 Working Conference on Mobile Information Systems - 2005 (MOBIS), Leeds, UK, December 6-7, 2005, 15 pages.
    - Presentation of a location-aware application framework.

Other related papers (not part of the syllabus):

- Erlend Stav, "**Developer's overview and comparison of the iPhone and the Android platforms"**, Sintef, June 2009, 30 slides.
- Kris Read and Frank Maurer, **"Developing Mobile Wireless Applications"**, IEEE Internet Computing, January/February 2003, 6 pages.
    - Overview of three important mobile application development technologies.
- J. Qaddour, **"WAP and Push Technology Integrated into Mobile Commerce Applications"**, IEEE International Conference on Computer Systems and Applications, March 2006, 7 pages.
    - A technical overview of WAP and WAP push.
- Franklin Reynolds, **"Web 2.0-In Your Hand"**, IEEE Pervasive Computing, pp. 86-88, January-March, 2009, 3 pages
    - Web 2.0 for mobile devices
- Roy L. Ashok and Dharma P. Agrawal, **"Next Generation Wearable Networks"**, IEEE Computing Practices Magazine, November 2003, 9 pages.
    - Introduction to wearable computing and overview of wearable networks. Also a nice overview and summary of wireless networks.
- Parthasarathy Ranganathan, Erik Geelhoed, Meera Manahan, Ken Nicholas, "**Energy-Aware User Interfaces and Energy-Adaptive Displays**," IEEE Computer, vol. 39, no. 3, pp. 31-38, March 2006, 8 pages.
    - Describes how energy-aware user interfaces can be used to save electrical power on mobile devices.
- Cynthia A. Patterson, Richard R. Muntz and Cherri M. Pancake, **"Challenges in Location-Aware Computing"**, IEEE Pervasive Computing, 03, 2003, 10 pages.
    - Presents challenges with location-aware computing, location-sensing infrastructure, adaptive resource management and mobile information use etc.