Recent Advances in Computer Assisted Surgery
Goals of the Seminar

Learn how to
• read up on a topic and how to read scientific papers,
• write a scientific paper,
• and present it
Scientific writing

- **Seminar:** Systematically investigate existing scientific literature regarding one specific topic. Summarize and present the most important findings.
- **During your studies (MA/DA):** Understand and discuss existing literature that are related to your own thesis.
- **Scientific publications (Conference / Journals / Workshops):** Present your own research and contribution to other researchers
Conferences

- Hundreds of conferences and journals on different topics
- Exchange of knowledge, make contacts, make yourself a name, confirmation, validation

- MICCAI: International Conference on Medical Image Computing and Computer Assisted Intervention
- ISMAR, MMVR, SPIE, ISBI, MIAR
Important Dates

- 19 January 2009  Tutorial and workshop proposals
- 16 February 2009  Acceptance of tutorials and workshops
- **8 March 2009  Submission of full papers**
- 1 May 2009  Rebuttal of reviews
- 18 May 2009  Acceptance of papers
- 15 June 2009  Camera ready copy for papers
- 20-24 September 2009 Tutorials, Conference, Workshops

Topics

Topics to be addressed in MICCAI 2009 include, but are not limited to:

- **Medical Image Computing**
  - functional and diffusion image analysis
  - segmentation
  - physical and functional modeling (bio-mechanical, CFD, etc)
  - shape analysis, atlases and statistical models
  - registration, data fusion and multiscale analysis

- **Computer Assisted Interventions and Robotics**
  - planning and image guidance of interventions
  - simulation & training systems
  - platforms, clinical evaluation of systems and safety issues
  - visualization and feedback (AR, VR, telepresence)
  - robotics and human-robot interaction

- **Biomedical/clinical Applications, Preclinical Imaging and Biomarkers**
  - computer-aided diagnosis
  - organ/system specific applications (including but not limited to neurosciences, oncology, orthopaedics, cardiovascular)
  - molecular and optical imaging
  - imaging biomarkers
Structure of a scientific publication

- **Abstract**: This is the part that will be read most often. Has to arouse interest in the reader. Usually the abstract is freely available.
- **Introduction**: Motivation and related work.
- **Materials and Methods**: Exact presentation of the material (Data, soft- and hardware, survey) and of the methods.
- **Results**: Usually quantitative values.
- **Discussion**: Conclusions, problems, future work and a summary.
- **Reference**: Related work and literature that is important to understand the paper. Everything that has been used to obtain the own results.
Your presentation in the seminar

- Does not have to follow the typical structure of a paper
- One recent scientific paper is provided
- Present the paper and related work
Access to scientific publications

- Access to the most publications is not free
- Many publications can be access for free using the TUM-proxy
- Some places to look for publications:
  - Google Scholar http://scholar.google.de
  - Citeseer http://citeseer.ist.psu.edu/
  - Elektronische Zeitschriftenbibliothek http://rzblx1.uni-regensburg.de/ezeit/
  - Our library!
    Books and electronic media...
    Link to instructions how to access/download electronic media: http://www.biblio.tu-muenchen.de/medien/emedien.html
    Link to access/download media outside of the campus: http://www.lrz-muenchen.de/services/netzdienste/proxy/documentweb/
Schein requirements

• Give a presentation
  – About 30-45 minutes
  – You should count with 2-3 minutes per slide
• Write a handout (about 10 pages, don’t copy and paste!)
• Discuss the handout and presentation with your supervisor (at least one week before your presentation)
• Attendance of the seminar meetings
\textbf{LaTeX}

- Typesetting system
- Widely used in academia
- Editors like TeXnicCenter
- Bibtex
Time and Dates

- Garching: Monday 12:00 – 14:00
- Garching: Friday afternoon
- Klinikum Innenstadt (Sendlinger Tor): Thursday evening, or other time
- How many dates? (probably 3-4)

- Semester ends 12. February
- Calendar week 48-51 (29.11.2010 - 24.12.2010)
- Calendar week 2-5 (10.01.2011 – 4.02.2011)