Seminar Wissenschaftliches Arbeiten
186.828, SS 2016, 2.0h (3 ECTS)

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Important!

Register to course in TISS: to get news & updates

These slides will on the website after this meeting

Official registration: by submitting the literature list

Topics are presented and assigned here today
Seminar Goals

Practice selecting, reading and understanding
- Search and select papers relevant to your topic
- Summarize them as a state-of-the-art report
- Prepare a talk about your topic in the seminar

This permits in-depth familiarization with the topic
Tasks

- Submit a literature list (chosen with supervisor)
- Attendance of 3 lectures
- Workshop on storytelling
- Meetings with supervisor: paper selection, discussion of papers, preparing talk slides
- Alternative: evaluate and compare algorithms
- Final talk in seminar
Literature List

- Analyze recent papers (select with supervisor)
- Study secondary literature to understand topic
- How to find relevant papers:
  - SIGGRAPH Proceedings
  - Google Scholar: find the right key words
  - Survey papers, often-referenced papers
- Submits a list of 10+ papers per email to supervisor & me → official registration
State-of-the-Art Report (STAR)

- 8 pages per student, preferably in English
- Format in the style of a scientific paper
- Use LaTeX template on course website
- LaTeX tools and guides also on the website
- Submit the draft in PDF format, per email to supervisor+organizer
Workshop on Storytelling

- You will get slides online on how to prepare
- Workshop (15min slots) to help you to write well
- Not only for the report, also for your thesis!
- Structure the ideas in your paper like a story
- Get interactive feedback on your personal story
- Workshop organizer is Martin Ilčik
Scientific Review

- You will get a draft of another student to review
- Typical conference review form (Eurographics)
- This helps author to improve the manuscript
- Guides on review writing on course website
- You will receive 2 reviews (student, supervisor)
- Improve final report according to reviews
Seminar Talk

- Prepare slides in advance, using template
- Each student talks for 15 minutes, english pref.
- 5 minutes discussion after each talk
- Focus is on overview/comparison of methods
- Present so that other students will understand it
- Active discussion is mandatory and is graded
- Submitted slides are presented on seminar PC
Grading

- Lecture attendance 5%
- Workshop attendance 5%
- Review: 20%
- Seminar slides+talk: 30%, discussion 5%
- Final report: 35%
- Late submission: 15% off per day, max. 1 week
Important Dates

- 22.03. 23:59 Submit literature list (per email)
- 07.04. 13:00 – 15:00 Lecture Prof. Wimmer
- 15.04. 13:30 – 16:30 Workshop Storytelling
- 21.04. 13:00 – 15:00 Lecture Prof. Gröller
- 18.05. 11:00 – 13:00 Lecture Prof. Purgathofer
- 21.06. 23:59 Submit slides (per email)
- 22.06. 10:00 – 16:00 Seminar talks
- 22.06. 23:59 Submit final report (per email)
• Now 16 topics will be presented
• After the presentation, please mark down at least 3 in order of preference (1, 2, 3, …)
• I will try to make a fair assignment of topics
1 Character and Crowd Animation

Conduct a survey of recent advances in

- Character Animation
- Crowd Animation

Bernhard Steiner
Conduct a survey of recent advances in
- Structural optimization for buildings/bridges etc.
- Modelling of plausible buildings

Bernhard Steiner
Write a review on $L_0$-based reconstruction, resampling and filtering techniques in computer graphics.

Reinhold Preiner
Evaluate an algorithm in $L_0$-based point set denoising.

5 Physics-based Cloth Simulation

Give on overview of

• Physics-based animation of cloth
• Mesh methods
• Particle methods
• Tearing
• Collision handling
• Etc.

Christian Hafner
Summarize new advances regarding
• Volumetric lighting
• Fog simulation
• Scattering effects

…and all in real-time!

Christian Hafner
Conduct a survey of recent advances in real-time non-photorealistic rendering

Christian Freude
Conduct a survey of recent advances in real-time screen-space rendering effects.
9 Hyper- and Time-lapse Videos

• Recent advances in creating time-lapse videos with a smoothly moving camera

Michael Birsak
Recent advances in video stabilization

2D
(a) a single global path
(b) our bundled paths

3D

Michael Birsak
Write a state-of-the-art report about methods that exploit perceptual aspects for rendering global illumination

Hiroyuki Sakai
Write a state-of-the-art report about methods that exploit temporal coherence for animated global illumination

Hiroyuki Sakai
Reinforcement learning is an amazing tool for optimizing the behavior of an agent in an environment. It is capable of playing computer games at a high level and also has applications in computer graphics. Check this out.

Károly Zsolnai-Fehér
Neural networks are universal function approximators that are used to solve difficult problems in image and speech recognition, image synthesis, and many more. Check this out and see for yourself!

Károly Zsolnai-Fehér
Conduct a survey of convex decomposition methods.

Pocket cuts [Lien et al 2007]

Lines of sight [Kaick et al 2014]

Concavity aware fields [Au et al 2012]

Mohamed Radwan
Conduct a survey of recent advances and trends in virtual reality

Mohamed Radwan
• Please mark at least 3 topics in order of preference (1, 2, 3, …), with your name
• Hand in the sheet
• Then I will assign the topics on the spot
Questions?

- Get in contact with your supervisor ASAP
- Discuss literature list with your supervisor
- Submit the list (to supervisor and me) by 22.3.