Advanced Topics in Animation - Seminar

Introduction

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- http://cg.informatik.uni-freiburg.de
Outline

- introduction
- presentation
- organization
- topics
Topics in Graphics

- animation
  - rigid objects
  - deformable objects
  - fluids
  - collision handling

- rendering
  - ray tracing, volume rendering, image-based rendering, rasterization

- geometry processing
  - mesh simplification
  - surface reconstruction
Seminar Topics - Example
Goals

- familiarize yourself with a topic
  - based on scientific publications
  - using information from the authors' web pages
  - using additional sources (internet, books)
- prepare a comprehensible presentation
- do not just reproduce the paper
- adapt the organization and the focus of the paper in order to get a comprehensible presentation
  - you can skip some content
  - you can add content from additional sources
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Preparation

- know your topic
  - examine relevant material thoroughly
  - do not try to circumvent problems

- prepare slides
  - allow 1 to 2 minutes per slide
  - slides should be uniform and not too dense
  - incorporate illustrations
  - slide titles should be helpful

- rehearse your presentation
  - gather feedback
  - adapt your presentation accordingly
  - check your slides with Matthias Teschner one week before your talk
Presentation

- introduction
  - introduce yourself, the title of your presentation

- overview
  - give an idea, but not too detailed

- motivation
  - illustrate the principle and/or applications
  - explain the goal of your presentation
  - cite references
  - the audience should be eager to listen your presentation
Presentation

- main part
  - should consist of distinguished parts
  - separate different parts of the presentation explicitly
  - each part should be introduced and summarized

- summary
  - tell the audience what you have told them
  - ask for questions
Structure of the Presentation

- title
- motivation, introduction to the topic
- information on author, affiliation, source
- outline of the presentation
- description of the problem
- methods to solve the problem
- results
- discussion of benefits, drawbacks, problems
- summary
Presentation - Summary

- introduce the title and yourself
- motivate and introduce your topic thoroughly
  - it is essential to arouse the interest of the audience right at the beginning
- give a brief overview
  - avoid too many details
- structure your presentation
  - introduce and summarize parts of your presentation
- summarize the entire presentation
- clearly mark the end of your presentation
  - e.g. “Thank you for your attention.”


General Comments

- check the presentation environment prior to the presentation
- do not occlude the projection
- avoid idiosyncrasies
- stay in time
Presentation

- do not learn your talk by heart
- do not read your talk
- do not read slides, but explain every item on your slide
- do not be shy or quiet
- communicate self-confidence
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Requirements

- presentation of a topic, 30 min
- discussion (technical aspects, form), 15 min
- written documentation
- English or German

- attendance of all presentations is mandatory

- information on http://cg.informatik.uni-freiburg.de/teaching.htm
Syllabus

April 21  Introduction

June 2
June 9
June 16
June 23
June 30
July 7
July 14
July 21
**Registration**

- obtain the papers from http://cg.informatik.uni-freiburg.de/intern/seminar/
- check the syllabus and the topic list for available papers and dates
- choose a paper / topic
- choose a date
- send an email to Matthias Teschner teschner@informatik.uni-freiburg.de with your registration request stating name, topic, date
- do not forget to register the seminar at the online portal / examination office
Goals

- familiarize yourself with a computer graphics topic
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  - using information from the authors' web pages
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- adapt the organization and the focus of the paper in order to get a comprehensible presentation
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Example
Overview

- particle-based fluids
- grid-based fluids
- position-based fluids / dynamics
- data structures
- fluid-rigid coupling
- surface reconstruction
- surface tracking
- volume rendering
Publications

- dataStructures_2005_CGF_collisionDetection.pdf
- dataStructures_2011_CGF_dataStructuresSPH.pdf
- dataStructures_Onderik_EfficientNeighborSearchParticleBasedFluids.pdf
- gridFluids_StableFluids.pdf
- gridFluids_StableFluidsImplementation.pdf
- gridFluids_fluid_EulerParticle.pdf
- grid Fluids_fluid_flow_for_the_rest_of_us.pdf
- gridFluids_particleFluids_2007_SIGGRAPH_course.pdf
- particleFluids_2007_SCA_SPH.pdf
- particleFluids_StateOfTheArt.pdf
- particleFluids_Solenthalerpcisph.pdf
- positionBasedDynamics_2013_EG_positionBased.pdf
- positionBasedFluids_2014_SIGGRAPH.pdf
- rigidFluidCoupling_2009_TVCG_rigidFluidCoupling.pdf
- rigidFluidCoupling_2010_VRIPHYS_boundaryHandling.pdf
- rigidFluidCoupling_2012_SIGGRAPH_rigidFluidCoupling.pdf
- surfaceReconstruction_2012_VRIPHYS_surfacePipeline.pdf
- surfaceReconstruction_sol_cavw07.pdf
- surfaceReconstruction_survey_of_marching_cubes.pdf
- surfaceReconstruction_zhu_surgraph05_sandfluid.pdf
- surfaceTracking_siggraph2011.pdf
- volumeRenderingInVisualEffects2010.pdf

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