Computer Animation
0-Introduction
SS 13

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Overview

- Specifying motion [5 W]
  - History of animation, computer animation
  - Review splines
  - Keyframing parameterized models
  - Freeform deformations
  - Morphing
  - Review quaternions
  - Rigid bodies
  - Inverse kinematics
  - Character skinning
- 2D motion [2 W]
  - Interpolated motion
- Passive motion (physics-based and procedural methods) [4 W]
  - Particle systems
  - Rigid bodies
  - Contact and collision
  - Mass-spring systems
  - Noise and turbulence
- Active motion (controller and data-driven methods) [3 W]
  - Flocking behaviour
  - Motion optimization
  - Motion capture

Aim of the course

- To present techniques used in animations, i.e. “moving objects”
  - Algorithms
  - Mathematical methods
  - Movement studies

  - Not for the faint of heart
  - Lots of math, but also fun

Exercitations

- Final grades
  - 40% exercitations
  - 60% final exam.
- Exercitations:
  - Two assignments
    - Stop Motion 20% (Delivery 30.04.13)
    - Blender Animation 80% (Delivery 02.07.13)
  - Dates (Tuesdays, 11:00 @LIN/NT-pool)
    - 16.4. Stop Motion – an introduction
    - 30.4. Modeling with Blender
    - 14.5. Animation / Rigging / Skinning
    - 28.5. Motion Capturing / Storyboard (optional)
    - …
  - Aline.Helmke[at]uni-weimar.de and Bernhard.Bittorf[at]uni-weimar.de

Literature

- Rick Parent: „Computer Animation. Algorithms and Techniques“, Morgan Kaufman 2002
- http://www.blender.org
- http://www.uni-weimar.de/medien/cg