Computer Graphics

Virtual Environments

Autumn 2013

"Velkommen!"
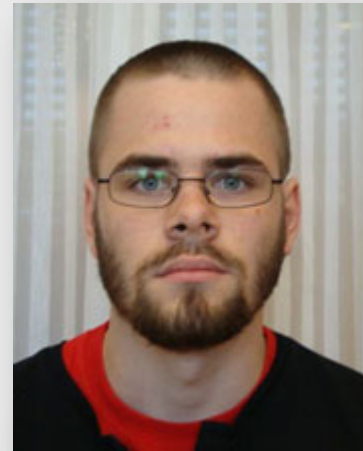
- ## We are
  - Tom-Robert Bryntesen: *3D programming*
  - Michael Louka: *Concepts, theory & practice*
  - Thomas Winger: *3D programming*

About the course

- Theory and practice for implementing non-trivial interactive 3D applications
  - with a focus on virtual environments

- Introduction to concepts and research issues

- Practical introduction to using the JMonkeyEngine 3D API to implement applications

Web Pages

- http://create.ife.no/vr/kurs/vrhiof13/info/
- Course Info
  - Plan, Tools, Literature, Evaluation, etc.
- Modules
  - New material added every week
- Resources
  - External resources, websites, groups, etc.

Course Plan

- Lectures in IFE's VR lab every Monday
  - Start at 12:15
  - Normally last 3 hours with
    - 1 hour on concepts/theory
    - 2 hours on applying concepts
  - The first and last lectures are an hour longer
- Also four programming "Workshops"

Course Plan

Week	Topic	Date	Duration
1	Introduction, including demos	23 September 2013	4
2	Content Production	30 September 2013	3
3	Workshop	7 October 2013	3
4	Interaction	14 October 2013	3
5	Animation	21 October 2013	3
6	Workshop	28 October 2013	3
7	Simulation	4 November 2013	3
8	Optimisation	11 November 2013	3
9	Workshop	18 November 2013	3
10	Immersion, including workshop	25 November 2013	4

Literature

- Required:
  - Lecture slides and notes (links/handouts)
  - Articles and papers (links/handouts)
  - Book: JMonkeyEngine 3 online documentation
- Optional:
  - See the main course website on the HiØ site for suggestions of optional further reading

Evaluation

- You will work on an assignment during the course that will be submitted for evaluation

- Your assignment should demonstrate your understanding of how to implement concepts taught

- *E-mail us a proposal of your idea if you need advice on whether it is appropriate and sufficiently complex*

Evaluation

- Basics required include:
  - 3D navigation
  - 3D interaction with objects
  - Manipulation of attributes of objects

- Must also demonstrate techniques presented during the course, including animation, optimisation, simulation, …

- In an appropriate context
  - i.e. contributing to the functionality of the application
  - e.g. arcade game, interior design, educational or sport simulator

Evaluation

- Can do coursework individually or in pairs
- Expect the application developed to be more "polished" if submitted by a pair
- You may be called in for an additional oral exam at the faculty's discretion
  - Oral exam focuses on work handed in

Advice, Questions, Guidance

- E-mail addresses:
  - Tom-Robert: tom-robert.bryntesen@hrp.no
  - Michael Louka: michael.louka@hrp.no
  - Thomas Winger: thomas.winger@hrp.no
- Can also visit us in Os Allé 5 (3rd floor)
  - Need to phone first to be let in so best to arrange visit via e-mail beforehand

Finally

We hope that you will find this course
education, interesting, useful, and fun!