ADVANCED UNITY PROGRAMMING

BY MARTIN KRAUS, AALBORG UNIVERSITY

MARTIN KRAUS

Associate professor in the section Media Technology Aalborg (MTA) of the Department of Architecture , Design, and Media Technology (AD:MT) at Aalborg University (AAU).

E-mail: martin@create.aau.dk

Office: 6.325 (zone 6 (facing South), 3rd level, i.e. 2nd floor)

LEARNING OBJECTIVES

- **Understand and use some “advanced” techniques for creating games.**
  - I.e., important stuff that I don’t teach in other courses and that you missed because you didn’t choose the elective course “Embodied Interaction”.
- **Learn about best practices in game development.**
  - As presented in http://gameprogrammingpatterns.com/

STRUCTURE

- **Four days with exercises (including short introductions).**
- **A one-week game project in groups of 2 persons.**
- **One day of presentations of the game projects and an exercise using them.**

SCHEDULE

		Procedural Geometry	Game AI	Camera Control & Optimization	Project Evaluation	Misc.
		Monday (Oct 12)	Tuesday (Oct 13)	Wednesday (Oct 14)	Thursday (Oct 22)	Friday (Oct 23)
9:15	12:00	Introduction to the course; generating meshes in Unity	Navigation and path finding in Unity	Camera control and navigation	Project presentations and discussion (10-15 minutes per project)	Deferred rendering; graphics optimizations; occlusion culling
12:00	13:00	Lunch	Lunch	Lunch	Lunch	Lunch
13:00	16:00	L-systems	Agent control	Game programming patterns for optimization; introduction to game project	Swap project with another group; discussion	Global illumination; image post processing effects; editor scripting; course evaluation

GAME PROJECT

Wait! Is this a 2-weeks game jam?

Errr ... it would be if we wouldn't put all kind of requirements on the game project to take all the fun out of it! >;-]

In groups of 2 persons, create a game in Unity with the following constraints:

- **Must contain procedurally generated geometry**
- **Must contain agent-based AI**
- **Must contain automatic camera control**
- **Must be winnable**
  - both by overcoming one or more gripping challenges (grip: repeatedly failing challenges with high risk and high reward)
  - and also by grinding (grind: repeated actions with low risk and low reward)
- **Must be for the target platform Windows PC**

Deadline for hand-in is Wednesday, October 21 at 18:00. Send an e-mail to martin@create.aau.dk with a link to the Windows build and the Unity project.