CS 586 Machine Learning for Game Design Syllabus

The syllabus below describes a recent offering of the course, but it may not be completely up to date. For current details about this course, please contact the course coordinator. Course coordinators are listed on the course listing for undergraduate courses and graduate courses.

Text Books

Required
, , The course will be based on research papers and tutorials.

Week-by-Week Schedule

Week	Topics Covered	Reading	Assignments
1	Course and Policies Overview Procedural modeling of 3D worlds, metaverses and procedural crowds.	Merrell (2008), Watson (2008) and van den Berg (2008)	
2	Ontogeny: generation of virtual creatures	Bongard (2003)and Sano (2006	HW1: Procedural Modeling
3	Learning for motion synthesis	Arikan (2003), Kovar (2004), Liu (2005)	HW2: Ontogeny
4	Artificial Life	Cariani (1992), Terzopoulos (1994), Sims (1994)	
5	Project Proposals and Spore demos.	www.spore.com	Proposal Preparation
6	Learning human-like behavior using neural networks	Thurau (2003), Thurau (2004a) and Thurau (2004b)	
7	Midterm		Midterm Preparation
8	Manifold learning for learning human-like behavior	Roweis (200), Tenenbaum (2000), and Thurau (2005)	HW3: Co-evolution Competition
9	Gamebot identification from traces	Golle (2005) and Chen (2008)	
10	Project Status Reports		Report Preparation
11	Bootstrapping social understanding from imitation. Case-based plan recognition	Breazeal (2005) and Kerkez (2004)	HW4: Gamebot Detection
12	Integration and evaluation of exploration-based learning in games	Aha (2004) and Karpov (2006)	HW5: Unreal Tournament Competition
13	Final Presentation of Game Prototypes		Presentations
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