Syllabus: CM 202: Computational Media Research

Overview of computational media research strategies. Includes case studies of how particular projects were defined and completed and how interdisciplinary concerns have been successfully integrated. Considers the expressive and authorial affordances of different system architecture approaches.

Piazza Forum

Grading

Project 1: 25%
Project 2: 25%
Project 3: 25%
Class Participation: 25%

Safe Space

It is important that we all work together to help foster an environment in which students feel safe asking questions, posing their opinions, and sharing their work for critique. If at any time you feel this environment is being threatened—by anybody, including the professor—speak up and make your concerns heard. If you do not feel comfortable speaking about it in person, you may leave private feedback, anonymously if you wish, on Piazza. If you feel uncomfortable broaching this topic with the professor in any way or for any reason, you should feel free to voice your concerns to the Dean's office.

DRC Statement

UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access in this course, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me privately during my office hours or by appointment, preferably within the first two weeks of the quarter. At this time, I would also like us to discuss ways we can ensure your full participation in the course. I encourage all students who may benefit from learning more about DRC services to contact DRC by phone at 831-459-2089, or by email at drc@ucsc.edu.

Schedule

Week 1

Tuesday, January 10

Class canceled because of strike.

Thursday, January 12

Course introduction. What does it mean to combine humanities, arts and engineering?

Week 2

Introduction to HTN (hierarchical task network) planning, the framework for the first project. Readings on interdisciplinary technical practice.

Tuesday, January 17

Introduction to HTN planning. Bring your computers to class. Will include brainstorming of possible projects.

Material to watch and read before class

The planning section of the Udacity course on Knowledge-Based AI. You'll need to create an account to sign into Udacity and view this course content, but it's free (the wonderful world of free MOOC content). The Planning section consists of 27 videos, which might at first scare you, but each one is quite short, and a number of them are little quizzes interspersed to help you test your understanding. So end-to-end all the planning videos are only about 27 minutes long.

The planning videos will introduce you to predicate-based representations of domains, operators, and, at the end, the higher-level tasks of HTN planning. After this high-level introduction, to more deeply understand the SHOP2 HTN planning model, read this paper:
SHOP2: An HTN Planning System
Dana Nau, Tsz-Chiu Au, Okhtay Ilghami, Ugur Kuter, J. William Murdock, Dan Wu, Fusun Yaman

Directions for download

Download the GUI interface version of JSHOP2.
Directions for running it can be found in the README file. Note that the directions to set the classpath *are wrong*. Instead, you'll want to set the classpath as follows:

Windows: JSHOP2_DIRECTORY\antlr.jar;JSHOP2_DIRECTORY\bin.build\JSHOP2.jar;.
Unix: JSHOP2_DIRECTORY/bin/antlr.jar:JSHOP2_DIRECTORY/bin/JSHOP2.jar:.

In the paths above, change JSHOP2_DIRECTORY to the directory path for whatever directory you've put JSHOP in.

Thursday, January 19

Readings

Toward a Critical Technical Practice: Lessons Learned in Trying to Reform AI

Philip E. Agre
This is a chapter in Geof Bowker, Les Gasser, Leigh Star, and Bill Turner, eds, *Bridging the Great Divide: Social Science, Technical Systems, and Cooperative Work*, Erlbaum, 1997.

Towards A Performative Aesthetics of Interactivity

Simon Penny
Fibreculture Journal, Issue 19, 2001.

HTN Planning Domain Example

I've created an example simple planning domain (Hello World) with instructions for how you make a new domain.

Week 3

Rhetoric and interpretation: how simulations encode points of view and are situated in networks of human meaning making.

Tuesday, January 24

Checkin re: HTN planning project.

Thursday, January 26

Readings

The Rhetoric of Video Games

Ian Bogost

Bogost, Ian. "The Rhetoric of Video Games." The Ecology of Games: Connecting Youth, Games, and Learning. Edited by Katie Salen. The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning. Cambridge, MA: The MIT Press, 2008. 117–140. doi: 10.1162/dmal.9780262693646.117

Game-O-Matic: Generating Videogames that Represent Ideas

Mike Treanor, Bryan Blackford, Michael Mateas and Ian Bogost

Procedural Content Generation Workshop at Foundations of Digital Games 2012

Proceduralist Readings, Procedurally

Chris Martens, Adam Summerville, Michael Mateas, Joseph Osborn, Sarah Harmon, Noah Wardrip-Fruin, Arnav Jhala

Proceedings of the Experimental AI in Games workshop at AIIDE 2016

Week 4

Narrative

Tuesday, January 31

Thursday, February 2

Week 5

Social Simulation

Tuesday, February 7

HTN planning project due. Introduction to Project 2 (evolutionary computation or behavior systems). Will include brainstorming of possible projects.

Thursday, February 9

Week 6

Ideology

Tuesday, February 14
Checkin re: Project 2.

Thursday, February 16

Week 7
Emotion

Tuesday, February 21

Thursday, February 23

Week 8
Game Developers Conference

Tuesday, February 28
Project 2 due. Introduction to neural networks. Brainstorming of possible projects.

Thursday, March 2

Week 9
Neural Computation in the Arts and Humanities

Tuesday, March 7
Checking re: neural network project.

Thursday, March 9

Week 10
Design Spaces

Tuesday, March 14

Thursday, March 16

Finals Week

Wednesday, March 22
Neural network project due.