CSCI 8220: *Advanced* Simulation Systems

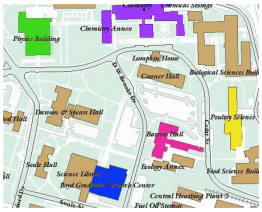
[not just about parallel simulation]

Course Overview

Short Term Plan

- Today go over expectations and course plan
- Next week introduction to discrete event simulation
- Different simulation "views"
  - » Event view
  - » Process oriented view

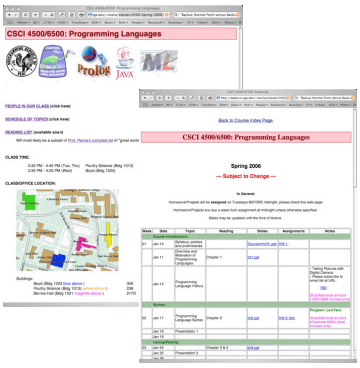
Administration / Logistics



- Who am I?
  - » Office: Boyd 219C
- Class:
  - » Poultry Science
- maria@cs.uga.edu
- Office Hours: Wednesdays 1:00-2:30 pm
  - » And by e-mail appointment
- TA: TBD - check class web page for updates… probably none

Communication

Web Page:
www.cs.uga.edu/~maria/
- » Classes/8220-Spring-2012/



- Your Responsibility
  - » Understand policies, honor code
  - » Work independently on projects/hw
  - » Check page often for updates "refresh" to get latest copy

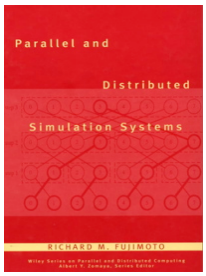
Email list:
- CS-PADS@listserv.uga.edu

Course Objective

- Learn about simulation and why is it useful
- State of the Art Simulation Techniques
  - » Focus: Agent Based Simulation Systems
  - » The focus is more on simulation execution rather than modeling, although we will do both.
- Hands on programming of ideas described in technical paper
- Introduction to research on simulation systems, past and present.

How we're going to do it

- Read & Listen
  - » Parallel and Distributed Simulation Systems, Richard Fujimoto
- Practice
  - » 2-3 introductory programming assignments
  - » 1 final project – preferably programming project
    - – Proposal, Interim reports/presentations
    - – Final Report & Presentation
  - » Technical paper summaries & presentations
    - – Learn how to read/skim papers
    - – present & listen to your peers
      - Learn how to make a nice presentation - friendly environment
- Test
  - » 2 Midterms, 1 Final, Quizzes
- Talk and think in class, and outside!



How to get an A? B? C?… F?

- Theory 45%
  - 2 Exams (10% each) + Final 15% + Quizzes 05% = 40%
- Practice 50%
  - Homework, weekly summaries & presentation & programming assignments
- Participation 5%
  - 100% attendance will raise your final grade by 2%
  - Constructive participation on class list may raise your grade by 1%

How to get an A? B? C?… F?

100	A
99	A
98	A
97	A
96	A
95	A
94	A
93	A
92	A
91	A-
90	A-
89	A-
88	B+
87	B+
86	B+
85	B
84	B
83	B
82	B
81	B-
80	B-

79	B-
78	C+
77	C+
76	C+
75	C
74	C
73	C
72	C
71	C-
70	C-
69	C-
68	D+
67	D+
66	D+
65	D
64	D
63	D
62	D
61	D-
60	D-
59	D-
58	F

Policy on Collaboration

- Assignments/projects/summaries:
  - Purpose: familiarization of concepts and details of programming languages
  - Work on project independently:
    - No direct sharing of code
    - No line-by-line assistant
    - No exchange of code
  - You are encouraged to ask questions of one another, and to respond to other student's questions (and especially on the email list)
- Exams:
  - Closed-book. No outside assistance is permitted. No additional materials may be used.
  - No make-up tests unless absence is due to serious illness. Doctor's diagnostic note is required. The final grade will be scaled accordingly.

Paper Summaries

- 1 page summary of an assigned technical paper -- need to reflect that you understand the paper and its contribution(s) to the area:
  1. What is the problem that the authors are trying to solve?
  2. What is their approach and how is it original?
  3. What are the assumptions/limitations?
  4. What are the results/impact of paper (Why is this paper important)?
  5. What constructive criticism can you give to the presenter (e.g. would should have been included/ excluded)?

Paper Presentations

- 1-2 presentations will be expected, needs to be in power point.
- We will assign presentations next week.
  - Caveat: If someone signs up for a paper and then later drops, we will need to shift the last scheduled person to the empty slot(s) (other volunteers are welcomed and will be solicited in class).
- Format:
  - A mini-conference
  - Audience will also be given an evaluation sheet to fill out.
  - 2 Session-Chairs (with prepared questions part of presentation grades).

Paper Presentations

- Turn in:
  - Presenter:
    - Turn in .pdf of slides
    - 1 summary
  - Session Chairs:
    - Turn in questions & answers
    - 1 summary
  - Rest of class:
    - 1 summary

Project Summaries

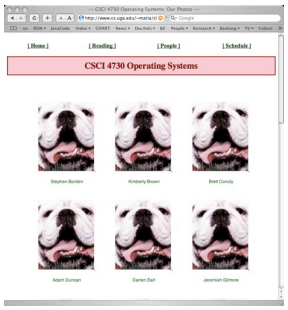
1. What is the problem that the authors are trying to solve?
   - » Why is the problem important?
2. What is their approach and how is it original and innovative? (original - compare it against contemporary approaches).
3. How is the approach evaluated?
   - » What are the simplifying assumptions?
   - » What are the strength and weaknesses of their solution?
4. What are the results/impact of paper
   - » Why is this paper important?
   - » Did they solve the problem?
   - » Does it have an impact - is it still relevant? Why is it worth reading.
5. What constructive criticism can you give to the presenter (e.g., would should have been included/excluded, make sure to address 'concepts' covered in the paper and relate how they were covered by the presenter).

Tentative/past projects for class

- Soccer Simulation Server
- Ant Simulator
- Simple Discrete Event Simulator
- SASSY Familiarization
  - » Agent Based Simulator
- Term Project

Homework 1

- See schedule for details…
- Digital Image -- How to get out of the dog pound (and improve your grade).



Introductions

- Name, major, year?
- What are you hoping to learn from the class?
- What type of projects are you interested in?
- What do you want to do when you graduate?