CSCI 4210/6210: *Simulation & Modeling*

[focus on parallel simulation *execution*]

Course Overview

Short Term Plan

- **Today go over expectations and course plan**
- **Wednesday paper summary discussion**
- **Tentative movie Thursday**
- **Next week introduction to discrete event simulation**
  - » **Different simulation "views"**
  - » **Event view**
  - » **Process oriented view**

Administration / Logistics

- **Who am I?**
  - » **Office: Boyd 219C**
- **Class:**
  - » **Boyd 208**
- **maria@cs.uga.edu**
- **Office Hours: Wednesdays After Class**
  - » **And by e-mail appointment**
- **TA: TBD - check class web page for updates... probably none...**
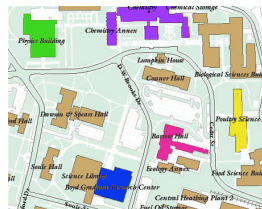
Communication

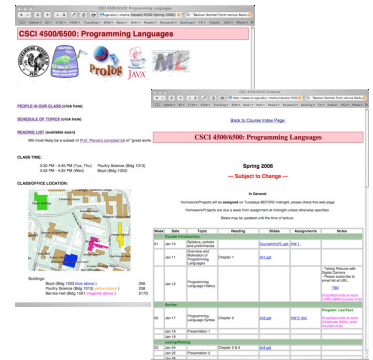- **Web Page (different from image on right)**
  - **www.cs.uga.edu/~maria/**
  - » **Classes/4210-Fall-2012/**
- **Your Responsibility**
  - » **Understand policies, honor code**
  - » **Work independently on projects & homework**
  - » **Check page often for updates "refresh" to get latest copy**
- **Email list (tentative name)**
- **CS-PADS@listserv.uga.edu**

Course Objective

- **Learn about simulation and why is it useful**
- **State of the art simulation techniques**
  - » **The focus is more on simulation execution rather than modeling, although we will do both.**
  - » **Agent Based Simulation Systems**
- **Hands on programming of ideas described in technical paper**
- **Introduction to research on simulation systems, past and present.**
- **History:**
  - » **Parallel & Distributed Simulation is now in the mainstream ← Converting previous advanced simulation course to introductory simulation course.**


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!**
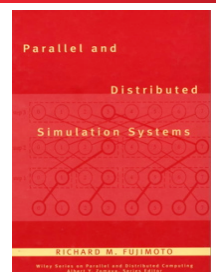
How to get an A? B? C?... F?

- **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?

Score	Grade		Score	Grade
100	A		79	B-
99	A		78	C+
98	A		77	C+
97	A		76	C+
96	A		75	C
95	A		74	C
94	A		73	C
93	A		72	C
92	A		71	C-
91	A-		70	C-
90	A-		69	C-
89	A-		68	D+
88	B+		67	D+
87	B+		66	D+
86	B+		65	D
85	B		64	D
84	B		63	D
83	B		62	D
82	B		61	D-
81	B-		60	D-
80	B-		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**
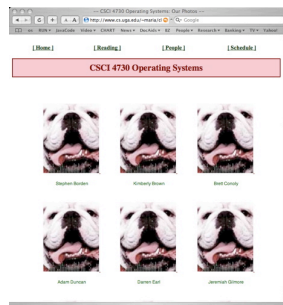- ● **Ant Simulator (Ant the insect)**
- ● **Stock market modeling project**
- ● **Simple Discrete Event Simulator (distributed)**
  - » **Ping/Pong like application**
- ● **SASSY Familiarization**
  - » **Agent Based Simulator**
- ● **Term Project**

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?**