Verification of Cyber-Physical Systems

Chris J. Myers

Lecture 0: Course Overview

Contact Information

- Course title: Verification of Cyber-Physical Systems
- Course numbers: ECE 5960/6960 and CS 5966/6966
- Instructor: Chris J. Myers
- Office hours: TTh 1-2pm
- Webpage available on canvas
- Instructor email: myers@ece.utah.edu
- Office: MEB 4112 / 581-6490

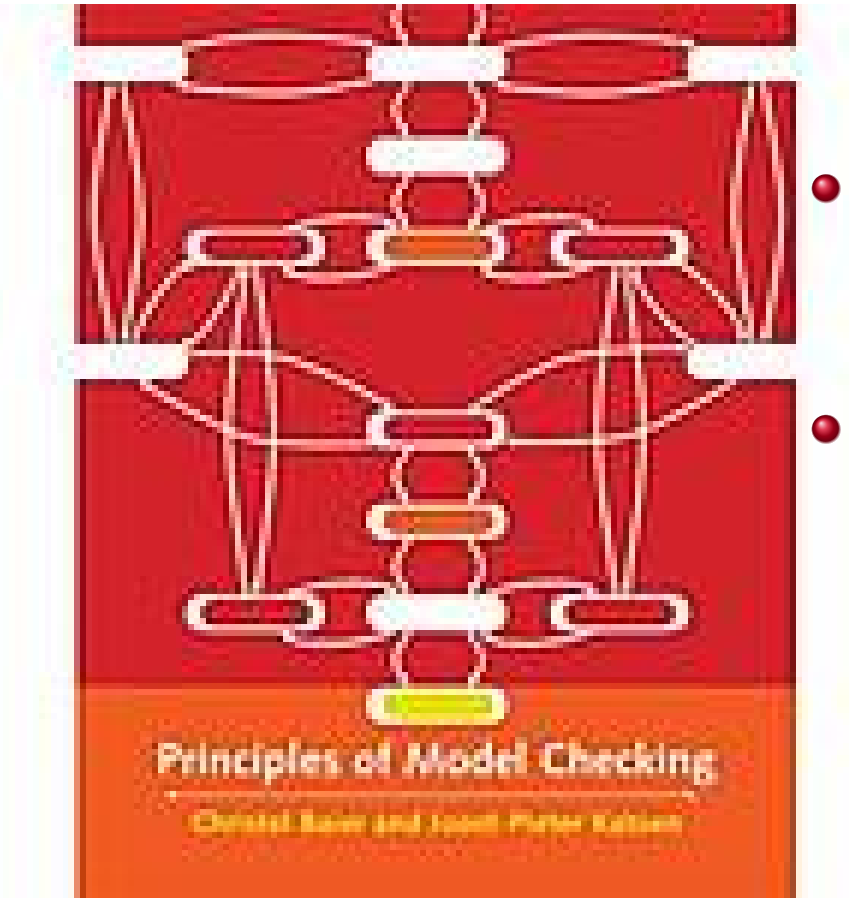
Prerequisites

- Mathematical logic and reasoning
- Data structures and algorithms
- Computer programming

Course Topics

- Modeling concurrent systems
- Logics for specifying system properties
- Model checking algorithms
- Timing verification
- Probabilistic verification
- Hybrid system verification

Textbook



- *Principles of Model Checking*
  Christel Baier and Joost-Pieter Katoen
  MIT Press 2008
- This text covers most of the course topics, but I will supplement it as needed from other sources.

Grading Policy

- Participation - 10 percent
- Homework - 40 percent
- Project - 50 percent

Project

- A major emphasis of course is on the final individual project.
- Project involves:
  - Selecting one topic from the course.
  - Finding research papers on that topic.
  - Implementing a verification algorithm.

- Must complete extra homework problems.
- Project must be more extensive.

Cheating

- Cheating will not be tolerated in this course.
- First offense results in a zero on the homework.
- Second offense results in a failure of the course.
- Cheating includes but is not limited to:
  - Examining or using solutions from previous years or other students in the class.
  - Copying a solution from another student. Be especially careful that any code is entirely your own.
  - Making ones solution available to another student.
  - etc.
- Use your common sense. Anything that gives you an unfair advantage over other students is likely considered cheating.