CS598-4: Advanced Topics in Computer Networks

- Instructor: Z. Morley Mao (zmao@eecs.umich.edu, 2241 EECS)
- Lecture time: MW, 1:30-3:00 PM
- Location: 1018 Dow
- Office hour:
  - W 3-4PM
  - email for appointment

Course topics

- Internet routing characterization
- Routing security
- Internet AS relationships
- Traffic engineering
- Critical network infrastructure services
- Network security: IDS, worms, and honeypots
- Peer to peer and overlay networks
- Sensor networking
- Network measurements
- CDNs
- Network models

Lecture Overview

- Administrative trivia
- Course overview
- Self introduction, student introduction
- Internet routing

Administrative Trivia

- Course Web page:
  - http://www.eecs.umich.edu/~zmao/eecs598-4/
  - Check it periodically to get the latest information
- Deadline means deadline
  - Reading summaries are due before each class
  - Attendance is important
- Assignments are done individually, unless otherwise noted
- Research project are encouraged to be done in groups (at most 3 people)

Goals of this Course

- Critical examination of current topics of computer networks
  - What assumptions are no longer valid
  - What are the new research problems to look at
- Understand solutions in context
  - Goals
  - Assumptions
- Learning how to do research in systems
  - Paper review, writing, and presentation
- Appreciate what is good research
  - Problem selection
  - Solution & research methodology
  - Presentation
- Apply what you learned in a class project

What Do You Need To Do?

- A research-oriented class project
- Paper reading
- Lead one class discussion
- 2-3 programming assignments
Research Project

- Investigate new ideas and solutions in a class research project
  - Define the problem
  - Execute the research
  - Work with your partner
  - Write up and present your research
- Ideally, best projects will become conference papers (e.g., SIGCOMM, INFOCOM, MOBICOM)

Send the Following Information

- Please send me (zmao@eecs.umich.edu) an e-mail with the subject “cs598-4 registration” and the following information:
  - Last and first name
  - Student ID
  - Your department
  - Your standing (PhD, master, undergraduate)
  - Preferred email address
  - URL of your home page
- Please also fill out the survey

Self Introduction

- I am a graduate from UC Berkeley
- Past research:
  - BGP
  - Network measurement
  - Content distribution networks
  - Intrusion detection systems