Welcome to Advanced Topics in Internet Technologies
Why Internet Measurements & Security

- Internet attacks are increasing in frequency, severity and sophistication
- Denial of service (DoS) attacks
  - Cost $1.2 billion in 2000
  - 1999 CSI/FBI survey 32% of respondents detected DoS attacks directed to their systems
  - Thousands of attacks per week in 2001
Why Internet Security

- Virus and worms
  - Melissa, Nimda, Code Red, Code Red II, Slammer ...
  - Cause over $28 billion in economic losses in 2003, growing to over $75 billion in economic losses by 2007.
  - Code Red (2001): 13 hours infected >360K machines – $2.4 billion loss
  - Slammer (2003): 10 minutes infected > 75K machines – $1 billion loss
Overview

- Course Administrative Trivia
- Distributed Multimedia Systems
- Review of Congestion Control
- P2P Systems and Overlay Networks
- Internet Security
- Internet Measurement
- Projects and paper presentations
Logistics

Instructor

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Course Overview

Style: Topical Presentations + paper reading + several projects + exam.

Start with the basic concepts of Internet architecture, its design principles and evolution

End-to-end, active networks, etc.

First half focus on network applications (distributed multimedia services, resource allocation, congestion control, P2P and overlays)

Second half of the course about Internet measurements and issues.
Prerequisites and Course

- Introduction to computer networking
- Highly Recommended: OS or and simulation background
- No required textbook – paper reading!
- Recommended books or papers
Grading

- Final Examination: 40%
- Project(s): 30%
- Group Presentation: 30%
Class Format I –

- Introduction of the basic problems, ideas and solutions (10 minutes)
- Student presentations of a chosen paper
  - 30 minutes for presentation, and 10 minutes for discussion
- Each non-speaker need to ask at least one question about the
Format of the Presentation

- Presentation should include the following
  - Motivation
  - Classification of related work/background
  - Main ideas
Class Format II - Debate

- Defensive team presentation: 20 minutes
- Offensive team presentation: 20 minutes
- Follow up argument from the defensive and offensive teams
Communication and Policies

Web page: http://www.cse.cuhk.edu.hk/~cslui/csc7221.html

No late handins! Will be ignored

Work division

Each team member should do similar amount of work

Survey on work division at the end of quarter

More contribution, better grade!