CS 428/528 Computer Networks

Yan Wang

Class information

- Instructor: Yan Wang (yanwang@binghamton.edu)
- Office: P12 Engineering Building
- Class Website:
  - http://www.cs.binghamton.edu/~yanwang/CS428_528.html
- We will use emails for communications; you must check the your BU email for messages periodically, if not daily.

A little bit about my research

- My research focuses on Mobile Computing, Smart Healthcare, Wireless Networks
- Some of my previous work:
  - Activity recognition using WiFi signals
  - Smartphone based Key stroke recognition
  - WiFi based Sleep monitoring
  - Human queue monitoring using single WiFi AP
  - Driver phone use detection
- On-going projects:
  - PIN sequence detection using wearable devices
  - Smartphone based health monitoring
  - Driver behavior detection and driving safety monitoring
- If you are interested in working on projects in system and networking areas, you are welcome to contract me.

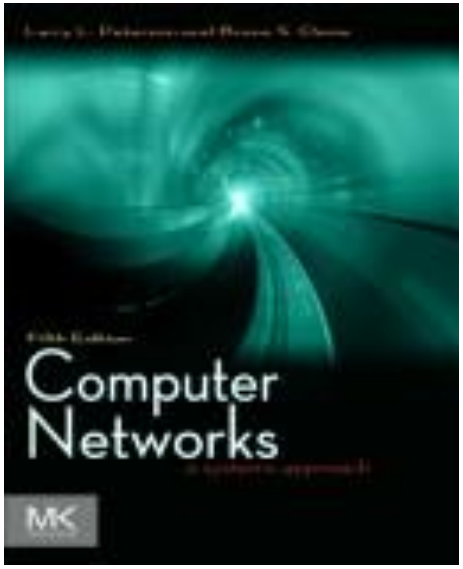
Teaching assistant

- Aniketh Reddy Mallesh
- Email: amalles1@binghamton.edu
- Office Hour: TBD
- Location: P17

- Sending me email with the subject line starting with [cs 428] or [cs 528]:
  - [cs428] When is the final exam?

Textbooks

- Required: Larry L. Peterson and Bruce S. Davie, **Computer Networks: A Systems Approach** Morgan Kaufmann; 5th edition; 2011



Tentative course topics

- OSI 7-layer model
- Signal encoding, modulation, and multiplexing
- Flow/error control
- Media access control
- Internetworking
- Routing
- TCP/UDP protocols
- Network applications
- Network security
- Multimedia networking

Couse outcomes

- Demonstrate an understanding of the protocols and applications of the Internet
- Demonstrate a basic understanding of performance analysis for computer networking
- Illustrate fundamental understanding of networking by programming portions of the entire network stack

Recommended reading

- Some research papers are recommended for reading:
  - Classic papers
  - Most advanced technologies

- Places to keep an eye on for networking research
  - SIGCOMM, INFOCOM, ICNP, IMC ……
  - MOBICOM, SIGMETRICS ……
  - SOSP, OSDI, USENIX ……

Important dates

- First class: January 16th
- Last class: May 4th

- Midterm: March 8th (in-class)
- Final: TBD

Grading

- Four components: homework, projects, midterm, final.

Quiz	15%
Projects	45% (Project1 20% + Project2 25%)
Midterm	15%
Final	25%

Quiz

- 10 mins, in class, open-book, no computer
- Must be individual efforts
- 2-3 questions
- Covering all the material taught in the last lecture
- No make-up quiz if you miss it

Projects

- All projects are to be done in groups of two students
- *NO credit* if your project does not compile.
- *NO credit* if you copy codes from any resources other than your group
- **Project 1** will focus on the implementation of an IRC-like chat server, focusing first on ensuring familiarity with socket programming
- **Project 2** will focus on file transfers and the protocol components necessary for efficient and reliable file transfer (retransmission, congestion control, caching, etc.)

Exams

- One midterm exam and one final exam
  - close book
  - one-page cheating sheet is allowed
  - final exam is cumulative

- No early exams
- Missed exams must be arranged with the instructor at least a week ***BEFORE*** the exam date.

Your responsibilities

- Understand the lecture and reading materials
- Attend office hours if needed
- Uphold academic integrity
  - Don't cheat or help others cheat
  - Don't copy homework from others or off the web
  - Don't copy code from others or off the web
  - Don't paraphrase code from others
  - Don't post code on discussion boards
- Turn in your assignments and projects on time
- Check class webpage and email regularly
- Let me know if you have any suggestions for improving this course!