CS 428/528
Computer Networks

Yan Wang
Class information

- Instructor: Yan Wang (yanwang@binghamton.edu)
- Office: P12 Engineering Building
- Class Website:
- 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

- TBD
- Email: TBD
- Office Hour: TBD
- Location: TBD

- Start the subject line with: [cs 428] or [cs 528]
Textbooks

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
Course 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: September 1\(^{st}\)
- Last class: December 15\(^{th}\)
- Midterm exam: October 22\(^{nd}\)
- Final exam: December 17\(^{th}\) (tentative)
Grading

- Five components: homework, quizzes, projects, midterm, final.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
<td>15%</td>
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<tr>
<td>Projects</td>
<td>45%</td>
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<tr>
<td>Midterm</td>
<td>15%</td>
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<tr>
<td>Final</td>
<td>25%</td>
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Homework assignments

- Must be individual efforts
- Must be typewritten, no hand-written submission
- Usually due in one week before the class
- Late assignments may sometimes be accepted with penalty, which will typically be 10% per day late
- No more than 2 days after the due date
Projects

- All projects are to be done in groups of two students.
- **NO credit** if your project does not compile.
- 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 cheat 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!