# Computer Networks

# CS3611

## Course Overview

Haiming Jin

# Course Logistics

# Welcome to CS**3611**

- Timing& Location :
  - Thursday, 8:00-10:45, 上院213
- Instructor: Haiming Jin
- Office Hours:
  - Timing: Wednesday, 16:00-17:00, week 1-16
  - Location: 软件学院专家楼，1108-2
- Email: jinhaiming@sjtu.edu.cn
- Course URL (to distribute slides, homework questions, lab instructions, etc.):
  - http://cs.sjtu.edu.cn/~jinhaiming/cs3611sp25/
- Canvas (to submit homework & labs, make announcements, Q&A, etc.):
  - https://oc.sjtu.edu.cn/courses/76003

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**Research Interests**

Internet of Things

- Wireless Sensing
- Low-Power Wireless Communication

**Personal Webpage**

http://cs.sjtu.edu.cn/~jinhaiming/

**Aug 2021-Present**
**Associate Professor**

June 2018-Aug 2021
Assistant Professor
SJTU

June 2017-June 2018
Post-doctoral Research Associate
CSL@UIUC

Aug. 2012-May 2017
Ph.D.
CS@UIUC
Advisor: Prof. Klara Nahrstedt

Sep. 2008-July 2012
B.S.
EE@SJTU

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- TA:
  - Rong Ding (dingrong@sjtu.edu.cn)
  - Xinyue Fu (fuxinyue@sjtu.edu.cn)
  - Beichen Yu (polarisybc@sjtu.edu.cn)
- TA office hours:
  - Timing: Wednesday, 17:00-18:00, week 1-16
  - Location: 软件学院专家楼，1119
- Prerequisites:
  - Basic concepts and principles of data communication will be helpful.
  - Basic concepts about how computer works with binary data.
  - Comfortable with C/C++ programming.
  - Probability.
  - Basic concepts of operating systems.

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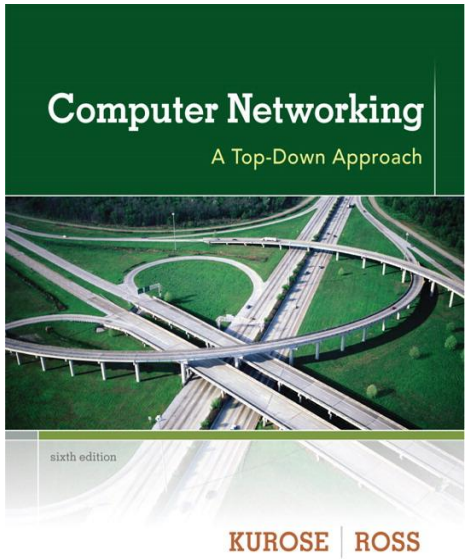
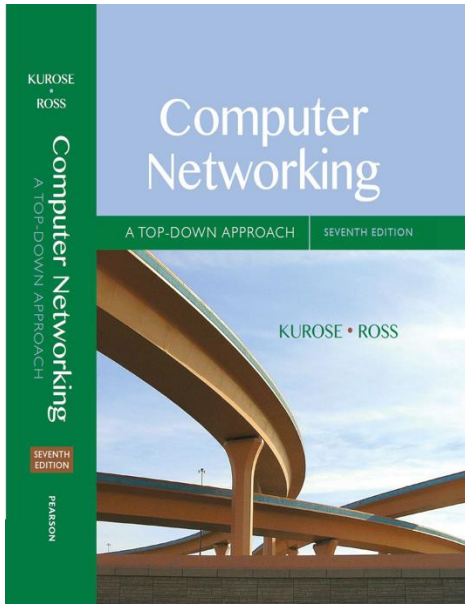
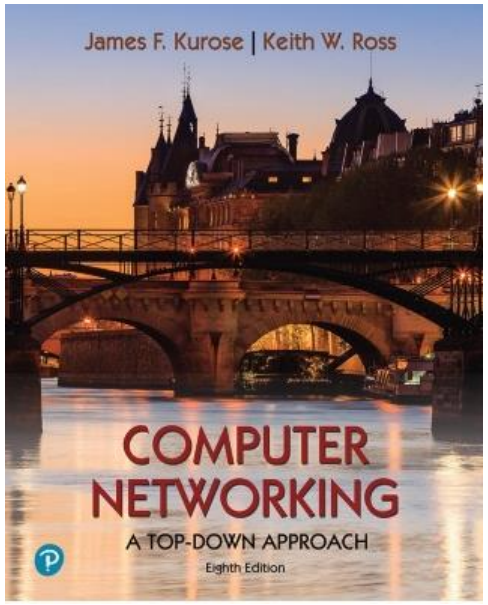
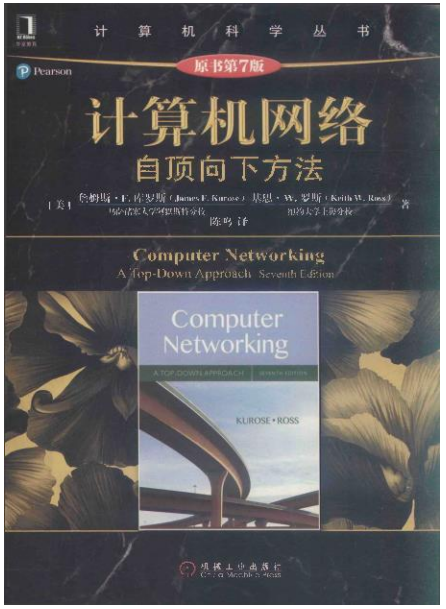
- Primary references:
  - Jim Kurose and Keith Ross, "Computer Networking: A Top-Down Approach", Pearson. (6th/7th/8th Edition)
  - “计算机网络：自顶向下方法”，机械工业出版社，译者：陈鸣。(原书第6/7/8版)



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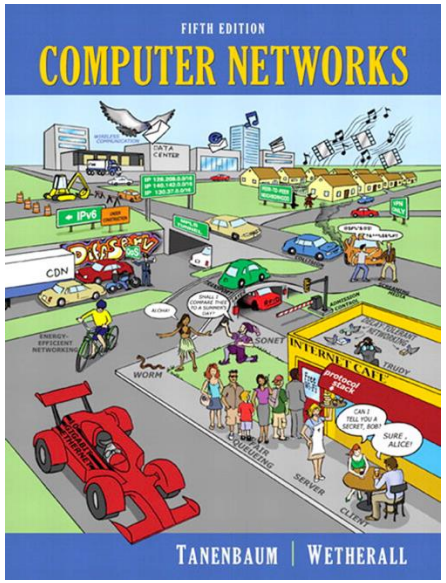
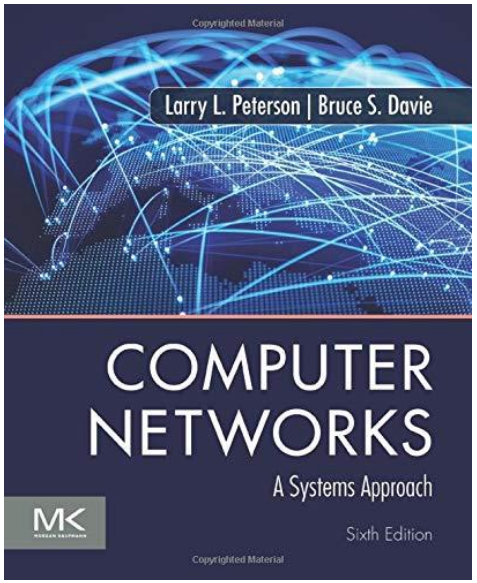
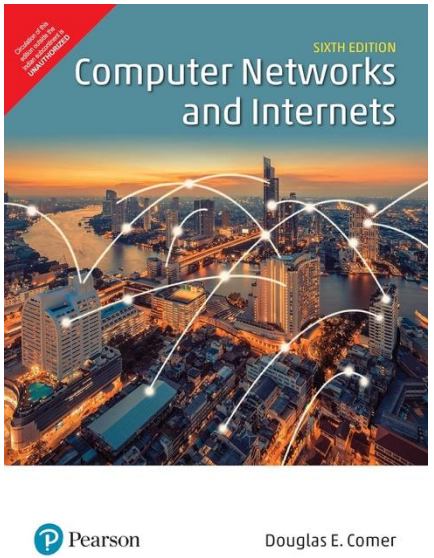
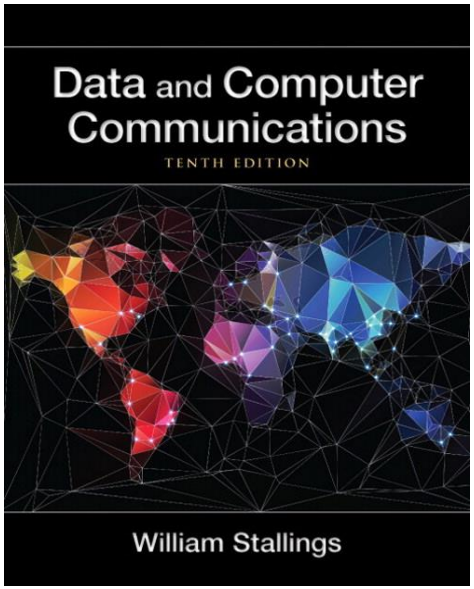
- Other references:
  - Computer Networks, Andrew S. Tanenbaum ,PRENTICE HALL
  - Computer Networks: A Systems Approach, Peterson and Davie, MORGAN-KAUFMAN
  - Computer Networks and Internets, Douglas E. Comer, PRENTICE HALL
  - Data and Computer Communication, William Stallings, PRENTICE HALL



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- Grading (tentative):
  - Homework & quizzes: 40%
  - Labs assignments : 30%
  - Final exam: 30%
- Policies:
  - Quizzes will happen randomly during the semester without announcements beforehand.
    - 补充说明：如果无法来上课，需要在课前跟我请假。如有quiz，会给课前请假的同学补交quiz的机会，否则不能补交quiz。
  - Please do all the assignments by yourself.
  - Late submission will not be accepted.
  - Any form of cheating will be reported to and subjected to the university policy.

# Course Summary
# (Very Briefly)

# What is this course about?

- *Introductory* (first) course in computer networking
  - For undergrads

- learn principles of computer networking
- learn practice of computer networking
- Internet architecture/protocols as case study
- Glimpses into the future of networking
- learn via hands-on experiments

# Course information

- By the time you are finished …
  - You understand variety of factoids and concepts
    - Propagation delay, transmit time, queueing, …
    - Internet layered architecture, HTTP, DNS, P2P, …
    - Sockets, Ports, …
    - Congestion Control, Flow Control, TCP, …
    - Routing, Basic Graphs, Djikstra's Algorithm, IP, BGP, OSPF, …
    - DSL Vs Cable, Aloha, CSMA, TDMA, Token, …
    - Cellular Network architecture, handoff, roaming, Mobile IP, …
    - Wireless Networks (WiFi)
    - Security, RSA, Digital certificates, MIM attacks, …
    - …

# What this Course Does Not Cover

- Does not cover
  - Device drivers, SDNs, cloud computing …
  - Network theory, graph theory, proofs
  - Radio hardware, embedded systems, scheduling
  - Modulation schemes, transmitter/receiver design
- Not a “communications” course

- This is course on
  - Understanding, analyzing, and (perhaps) designing protocols and algorithms in networking systems (with case studies in wired and wireless networks)

# What's the difference between

Communications

And

Networking

Hello!
I am CS3611