Welcome to

CS 3516:
Computer Networks

Prof. Yanhua Li

Time: 9:00am –9:50am M, T, R, and F
Location: AK 219
Fall 2018 A-term

Road map

- 1. Class Staff
- 2. Class Information
- 3. Class Composition
- 4. Official Communications

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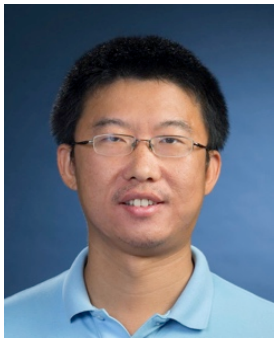
Who am I?



Yanhua Li, PhD
Assistant Professor
Computer Science & Data Science

PhD, Computer Science, U of Minnesota, 2013
PhD, Electrical Engineering, BUPT, 2009

Research Interests: Wireless networking, Network Measurement, Big data analytics, Smart City

Industrial Experience: Bell-Labs, Microsoft Research, HUAWEI research Labs

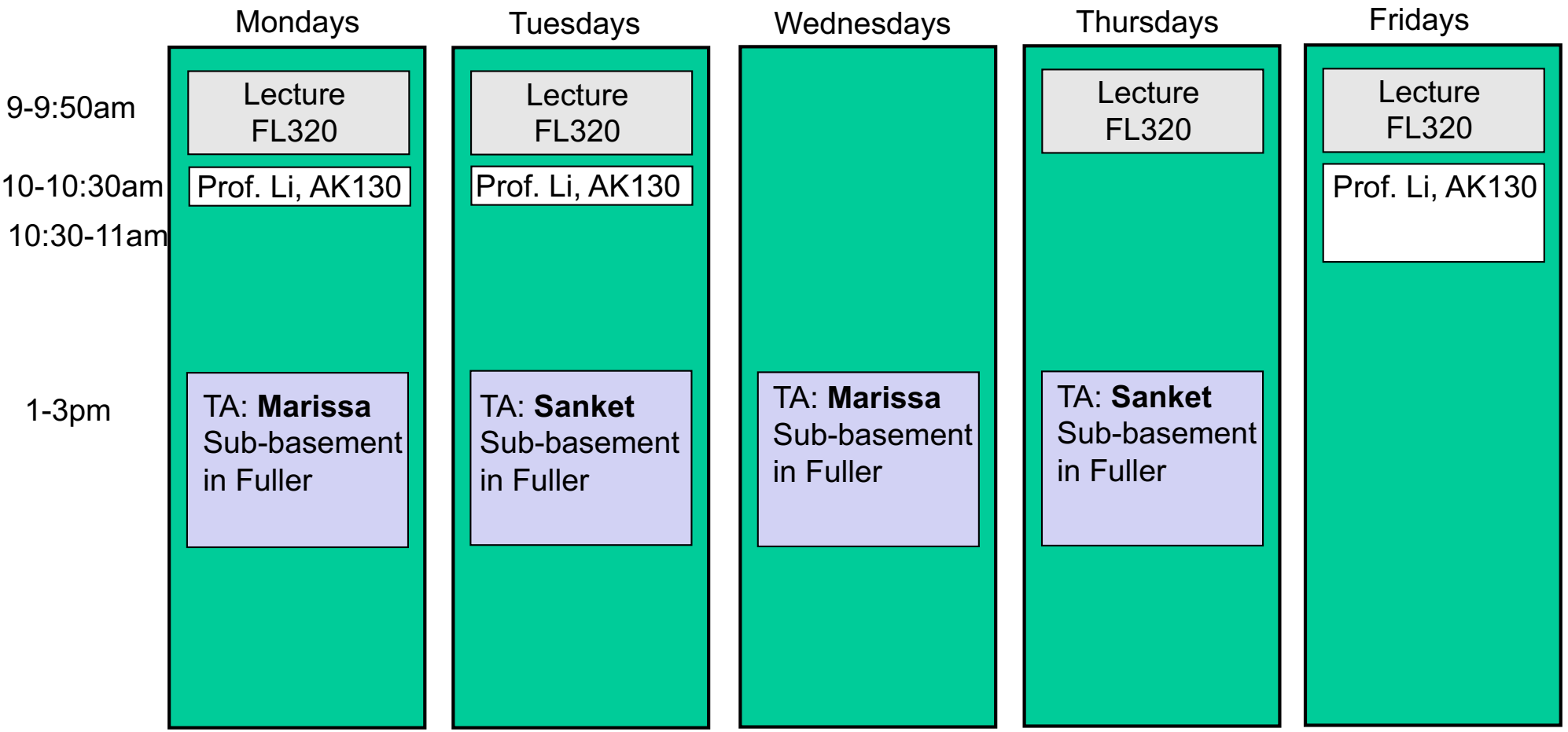
Teaching Assistants

- **TA: Bennett, Marissa**
- **Email**: mbennett at wpi.edu
- **Office Hours:** 1PM – 3PM on Mondays and Wednesdays

- **TA: Gujar, Sanket Rajendra**
- **Email**: srgujar at wpi.edu
- **Office Hours**: 1PM - 3PM on Tuesdays and Thursdays

- TA offices at Sub-basement in Fuller Labs)
- (Please take your WPI ID card to open the lab door!)

Class Calendar & Office Hours



Class Etiquette

State your name every time you:

- **ask** a question OR
- **answer** a question OR
- make a **comment**

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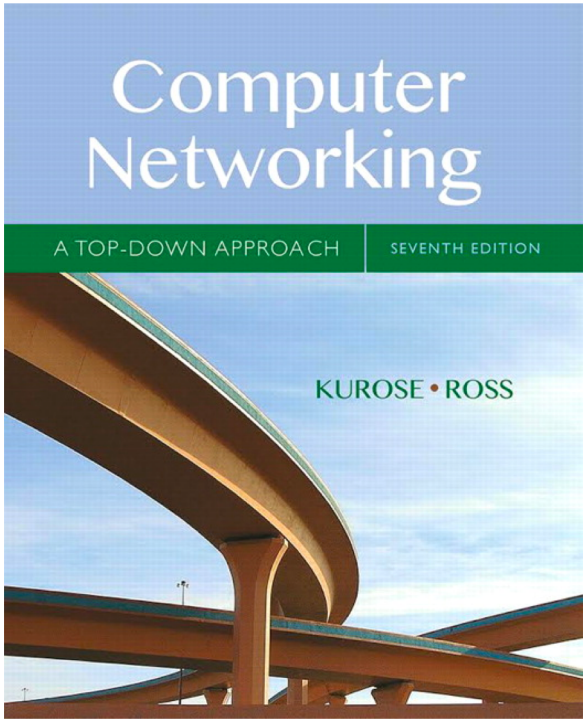
Class Information

- Class Website :
  - http://users.wpi.edu/~yli15/courses/CS3516Fall18A/
- Announcement Page
  - Check Canvas announcement web page periodically
  - canvas.wpi.edu
- Class Mailing List for announcements, Q&As, discussions, etc.
  - cs3516-ta@cs.wpi.edu (reaches instructor and TAs)
  - cs3516-all@cs.wpi.edu (reaches students and class staff above)

Textbook

- **Computer Networking** - A Top-Down Approach (**7th edition**), by James F. Kurose and Keith W. Ross, Pearson, 2016.
- ISBN-10: 0133594149



Why learn about computer networks?

- More and more applications need connectivity
  - Social Media, Internet of Things,
- More and more are connected devices
  - Connected Vehicles, Smart Devices
- **You may know how to use them, but do you understand them?**
- A basic understanding of networking is fundamental for building next-generation systems
- This is what the world is heading!!!!

Course Objectives

- **UNDERSTAND HOW THE INTERNET WORKS**
  - Building a broad understanding of the principal protocols used in computer networks such as HTTP, DNS, TCP, IP, etc.
  - Expose standard network terminology
  - Programming:
    - TCP/IP network socket programming
  - Recommended background:
    - Programming: CS2301, CS2303,
    - OS: CS3013

Course Progression

- Week 1-2: Overview
- Week 2-4: Application Layer Protocols
  - P2P, HTTP, SMTP, DNS
- Week 4-5: Transport Layer Protocols
  - UDP and TCP
- Week 6: IP, Routing Protocols
- Week 7: Link Layer Protocols
- Week 8: Wireless & Data Center Networking
- Slides for the lecture will be posted on the website

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Course Composition

- Lectures
- Quizzes
- Programming Projects
- Labs
- Exams

1. Lectures

- **Sampling** of important concepts / topics will be covered in class

- The topics to be covered can be found on the **reading list** on the **course website**.
  - https://users.wpi.edu/~yli15/courses/CS3516Fall18A/index.html

- Students are expected to have read the sections to be discussed in a class

- **BUY/RENT/BORROW the textbook**

- A c**lass is to be interactive** experience

2. Quizzes

- **8-10 Quizzes**
  - **the quiz with the lowest score will be dropped**
- First Quiz: **Monday (Aug 27th)**
- 2 - 3 Short Questions
- First 12-15 minutes of a class
- On quiz days, if you come **late** to class you will have less time to finish the quiz
- If you show up after 15 minutes --- you get a **ZERO** in that quiz.
- **Quiz topics** will be announced at least a day before the quiz (by email)

3. Course Projects

- **3 Programming Projects** in the class

– Projects designed to give you a deeper understanding of various aspects of networking

- Students **need very good C/C++ and systems programming** background
- Code must run on CCC linux servers (more information on class website)
- A willingness to request help when needed
- **All projects are to be done INDIVIDUALLY**

4. Class Labs

- **3 lab assignments**
- Hands-on experience with protocols learned in class
- Based on using the Wireshark packet sniffer
  - Will require everyone to download and install Wireshark (http://wireshark.org)
- **All Labs are to be done INDIVIDUALLY**

5. Exams

- **1 mid-term and 1 final exam** in the class
- Will include all the topics covered until that point in class

– May include topics in the reading list but not necessarily covered in class

- **The exam will be held in class, closed book (1 page 2-sided A4 cheat-sheet is okay)**

Workload and Grading

- Grading
  - 90+ A, 80+ B, 70+ C, 70- D,
- Workload
  - 30% - 8-10 Quizzes
  - 30% - 3 Projects
  - 15% - Mid-Term Exam
  - 15% - Final Exam
  - 10% - 3 Lab assignments

EVERYTHING HAS TO BE DONE INDIVIDUALLY

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Official Communication

- **Official course communication**
  - Class discussion,
  - Class hand-outs,
  - Emails,
  - CANVAS discussion board, and the course Web pages
  - Office Hours
- **All emails:**
  - **subject line starting with [CS3516]**.
- **Response Time:** up to **24 hours**.

(Emails sent on a Friday may be answered by the following Monday.)

Course Management System

- We will use **Canvas** for the course.
  - https://canvas.wpi.edu/
- Will be used for:
  - Project & Lab submissions
  - Viewing feedbacks on submissions
    - Hard copies graded by TAs and me,
    - Scores are updated Canvas system,
  - Viewing grades
- If you have questions, please email me or the TAs and we can assist you

Late Submissions

- Projects and Labs are due online at **11:59pm** on the due date, unless otherwise noted.
- Late assignments of projects and labs will be accepted up to one day (24 hours, with the weekend counting as one day) late.
- **Any late assignment will be penalized 10%** of total assignment value.
- Submission later than 24 hours after the deadline will **not** be accepted.
- Makeup for exams, projects and labs will be allowed only in extenuating circumstances at the discretion of the instructor.

Academic Honesty

- The WPI Academic Honesty Policy
  - http://www.wpi.edu/offices/policies/policy.html
  - describes types of academic dishonesty and requirements in documentation.
- In the case of academic dishonesty,
  - Report the incident to the *Dean of Student Affairs*.
  - **Penalty:** an **NR grade**.

Questions?