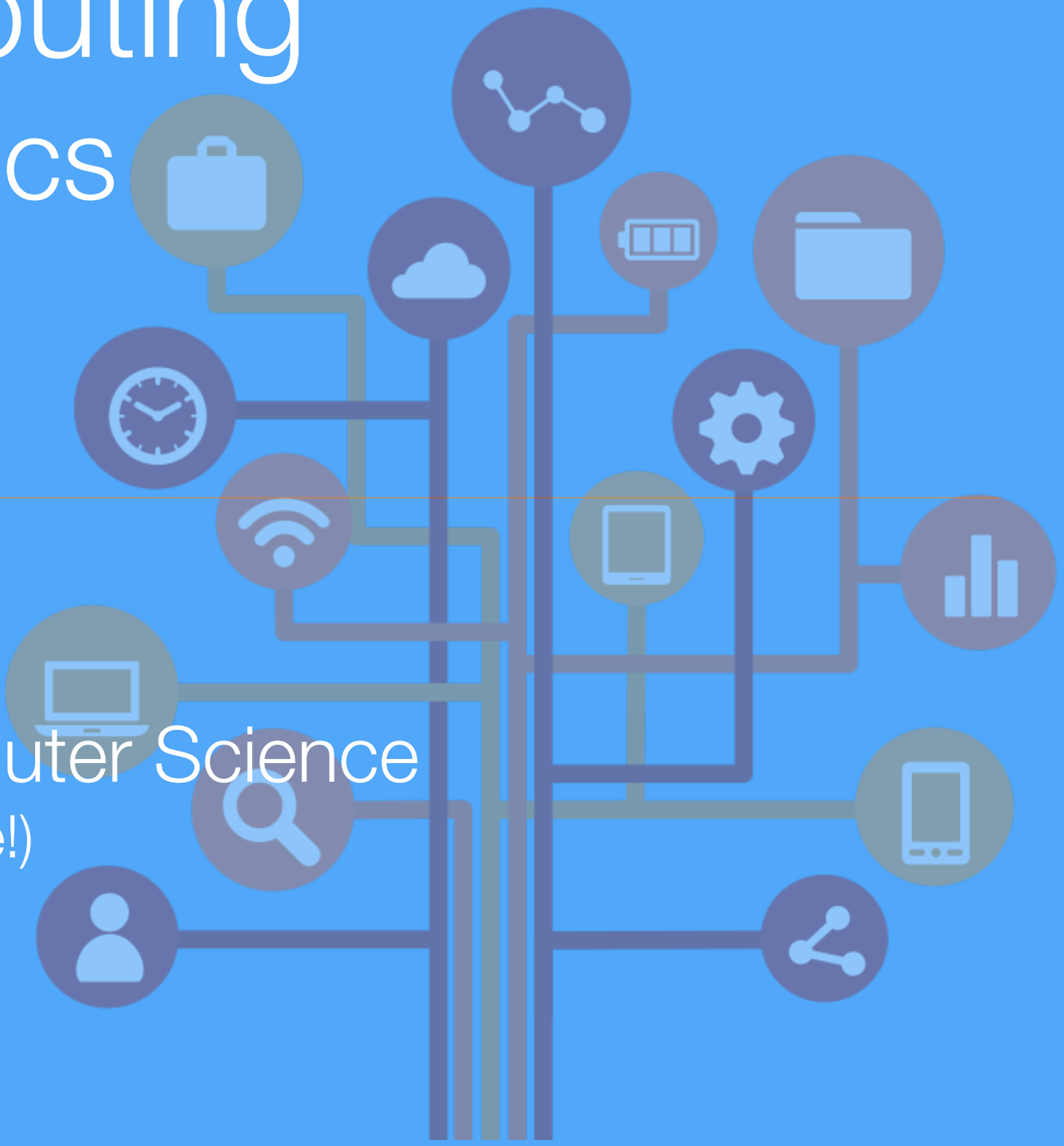
Cloud Computing
Course Logistics



Hong Xu
Department of Computer Science

Spring 2020 (A new decade!)

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About instructors

- **Hong Xu**, Associate Professor, CS
  - I go by Henry
  - Best way to reach me: henry.xu@cityu.edu.hk
  - Office: Yeung B6419, blue zone 6/F (make an appointment first, otherwise I'll probably be busy)
  - Research interest: Computer networks and systems
    - big data systems, data center networking

About the course

- All materials on Canvas
- Also a platform for instructors and TAs to efficiently manage out-of-class Q&A in a collaborative way
- Head TA: Hu Wan, hu.wan@my.cityu.edu.hk
- Lab TA: Yangbin Chen, robinchen2-c@my.cityu.edu.hk
- Marking TAs: Jiamin Li, jiaminli8-c@my.cityu.edu.hk, Libin Liu, libinliu-c@my.cityu.edu.hk

Prerequisites

- Background on computer networking, OS
- Comfortable with Java programming
- Comfortable with Unix/Linux
  - Some background will be introduced in lab 1
- Talk to me if you are not sure
- A credit card for AWS EC2

Assessment

- **Final exam (30%)**
- **Assignments (20%)**
  - Programming on Amazon EC2, 3 assignments (5%, 7%, 8%)
  - USD $75–$100 credit per person from Amazon Educate Program
- **Group project (30%)**
  - Research or technical topics chosen by yourself
  - Deliverables: proposal, report, group presentation

Assessment

- **Paper review (20%)**
  - Everyone writes 2 reviews for 2 different topics; 10% for each review
  - Deadlines (tentative): week 6 and 12
  - There are 9 topics corresponding to lectures from week 5 to 13, each with at least 3 papers to choose. One fundamental/ classical paper, and more recent papers
  - https://henryhxu.github.io/5296.html

To pass

- Get more than 30% in the coursework
- Get more than 30% in the final exam
- Total course mark higher than a threshold (34, 34.5)

Tentative Schedule

Wk	Topic
1	Logistics; cloud fundamentals
2	Virtualization I: OS review, CPU virtualization
3	Virtualization II: CPU scheduling
4	Emerging trends in hardware and virtualization
5	Distributed storage
6	Data analytics systems
7	Cluster management
8	Memory systems
9	Workload measurements
10	Networking I: Architecture
11	Networking II: Performance
12	Machine learning systems
13	New&hot: energy/microarch; final review

Objectives and Focus

- Understand the technological foundation of cloud computing: Virtualization (CPU)
- Understand the broad topics in cloud computing
  - Infra: storage (memory), networking, cluster management
  - App/Framework: batch processing, machine learning, workload characteristics, data analytics (labs), web dev (labs), server less (labs)
- *We hope you can identify opportunities in these topics, and work on them in your group projects or your research*

A note about EC2

- You may need to pay for EC2 yourself, using your credit card! (more details in lab 2)
  - AWS free tier
    - $75–$100 USD credit from Amazon Educate Program, which you have to register yourself
- Shut down your virtual instances whenever you are done
- We (instructors or the dept) cannot financially help you in any means. So be very careful

Academic honesty

- In short, don’t cheat!
- Don’t copy code or solutions from your classmates or third-party sources, and don’t let others copy yours. Both cases are plagiarism and penalized in the same way

Protocol for Plagiarism

- TA and myself will detect possible plagiarism in your code/reports.
- Suspicious cases will be directly reported to the CS general office. A panel will be formed to deal with all cases.
- Minimum penalty: zero mark for the assignment/ homework.

Textbook/References

- No official textbook
- Reference materials
  - We'll post reference papers for some of the topics. They're usually very good papers (you should read as much as possible!)
  - Many MOOC courses on cloud computing: coursera, edX, etc.

Other matters

- Try to come on time, as we have labs and lectures back-to-back …
- Participate as much as you can in the classroom. It's a two-way street.