CS 271 (Winter 2020) Introduction to Distributed Computing

General Information

- **Instructor:** Amr El Abbadi **Office:** 3115 HFH **Office hours:** Tues, Thurs: 11:00am–12:00pm
- **Teaching Assistant:** Rachel Redberg **Office hours:** Mon, Wed 2:00pm–3:00pm **Office:** TA Trailer

Format

In this class I will be presenting some of the fundamental topics that form the basis of research in Distributed Systems and Computing. My goal is to get you all up to speed on the foundations so that by the end of the quarter you are ready to launch into Cloud Computing and Blockchain. The topics we will cover are in no way exhaustive, and of course, they reflect my own subjective biases and some of my current interests. I will not be using a textbook. However, you will be expected to read several papers, which I will either handout or post a pointer to from the class website. I expect you all to read the papers that I discuss in class. I plan to have about 5 in-class one hour quizzes on Jan 16, Jan 30, Feb 13, Feb 27 and March 12. Please be sure to come to class and not miss these quizes. There are NO makeups. There will also be 2 programming assignments, and a major project, to further explore some of the basic ideas discussed in class. The programming assignments will be indivdual, while the final project will be in teams of two. The programming assignments will all be graded during individual demo presentations. The specific times for the two programming assignment demos will be annouced later. However, the final projecct demo day will be on Friday March 13. There is no final exam during finals week.

Supplementary Textbooks

- Distributed Operating Systems and Algorithms by Chow and Johnson, Addison-Wesley, Reading, MA (1997).
- Distributed Systems: Concepts and Design by Coulouris, Dollimore and Kindberg, Addison Wesley 2005.

Policies and Quizes

The course grade will be based on the quizzes and programming assignments/project. Requests for quiz regrades must be submitted within 1 week of their return. Finally, grades will be approximately allocated as follows: quizes: 50%, programming assignments/project: 50%.

A Sampling of the Topics Covered

1. Time and Global States
2. Coordination, Mutual Exclusion and Agreement
3. Fault-Tolerance
4. Byzantine Agreement
5. Misc state of the art papers with emphasis on Cloud Computing and Blockchain