CSc 4220/6220 – Fall 2018
Bonus Project
Due Sunday, December 2nd 11:59 pm
No late deadline

Goal
Given that the course duration is so short and yet the topic is so vast, the goal of this extra credit project is to provide the student with an opportunity to explore one of either the remaining topics or something within the realm of computer networks. The objective should be to prepare a discussion like paper that aims to walk the reader through a particular computer networking topic. From the paper, a relevant presentation will also be provided, along with a practical implementation/simulation.

Example Topic
If you wish to understand Voice-over-IP, an exposition of section 9.3 in the spirit of class lectures could be attempted. The paper would then consist of:
- a) an overview of VoIP,
- b) an accounting of the primary limitations/drawbacks to IP in voice apps,
- c) a delineation and analysis of each such limiting factor (e.g. packet jittering),
- d) an outline of how each delaying element is remedied (e.g. FEC),
- e) an example case study such as that of the VoIP component of Skype (e.g. how P2P is leveraged with Skype)

Requirements
Ideally, the end purpose should be where you would be able to educate another student on your particular computer networking topic to a nontrivial level of detail. To that end, a paper, presentation, and implementation will comprise the project specification.

1. a 4-page minimum discussion paper,
2. a corresponding presentation that could be used to educate an audience on the topic in no more than 20 minutes,
3. a code implementation of the chosen topic.

In the context of the above example, the paper would cover all of (a) – (e), with the necessary equations, graphs and diagrams in the analysis of the end-to-end delay factors and packet loss recovery techniques. The discussion of (a), (b) and (c) will be at the level of the textbook's, and the example for (e) would be enough so that the intended reader leaves with a broad understanding of VoIP within Skype. If the author so chooses or the topic warrants such, there could be a code implementation section.

Select a topic that has not been chosen by another student. It is better to be as specific as possible. For instance, do not select network security as a topic, as this is very broad. Instead, you can select *Data Security in Multi-cloud Environments*. You can select your topic in the discussion forum that is set up at the iCollege class site.

To summarize, the goal is that you delve deep enough into your topic of choice to understand it well enough to teach the concepts to a peer. You should make sure to use your own words and examples for the report and slides – following the student code of conduct. Of course, the implementation should also be your own work, and be properly documented. Submit one zip file of your project.