

ECE 50863
Reading Assignment Related to Project 3

Name:

Collaborator (if any) – see instructions:

Instructions:

- 1) All questions pertain to the paper: “A Buffer-Based Approach to Rate Adaptation”, Sigcomm 2014
- 2) Answers must be neatly typed. You may use additional space than what’s provided in this document, but you probably don’t want to exceed 3-4 lines for any question.
- 3) Although the assignment will be a small portion of the credit for the Project, it is important to do it carefully as it will impact your implementation, and there will be detailed questions in the Final Exam.
- 4) You may collaborate with one other student. Collaboration should be restricted to discussing the paper/joint reading sessions, and brainstorming about the questions below. The answers that each of you write must be individual and using your own words. Also, if you collaborated, mention who you collaborated with above.

Questions:

- 1) What does the paper argue are the main issues with current video streaming approaches? What is the main idea behind the paper?
- 2) Summarize the BBA-0 algorithm in 2-3 sentences.
- 3) What is the difference between CBR and VBR video? What is the main advantage of VBR video?
- 4) What is the main issue with the BBA-0 algorithm that is addressed by the BBA-1 algorithm? How is the issue addressed?
- 5) What is the main limitation of the BBA-1 algorithm?

- 6) Summarize in 3-4 lines how the BBA-2 algorithm addresses the limitations of the BBA-1 algorithm.
- 7) The MPC-based paper that we saw last week used emulation experiments to compare different algorithms. What is the approach used by the buffer-based approach paper? Comment on the strengths and weaknesses of this evaluation approach relative to an emulation approach (3-4 lines).
- 8) The paper uses two performance metrics to compare different algorithms. Which metric does BBA-0 perform better than the control algorithm on? Which metric does it perform worse on?
- 9) Does BBA-2 improve performance over BBA-1 on both performance metrics? If not, which one does it improve, and which metric does it perform worse on?

- 10) [Open-ended]: Compare this buffer-based paper with the MPC-based paper. Please comment on which approach you think would perform better and why. If you think the performance may depend on the conditions, explain when one algorithm may perform better, and under what conditions the other algorithm may perform better.