# Name: Kevin Kerliu

**Date:** 03/04/2019

**Paper Title:** Optimization of TCP Segment Size for File Transfer

**Author Names:** R. M. Bournas

**Year Published:** 1997

**Open questions for discussion in class:**

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| --- |
| * How can we determine the network reliability factor of a multi-hop network with an unstable hop error rate? * Is it possible to develop a methodology to calculate the network reliability factor? |

**The topic areas covered by the paper are:**

The problem of optimal TCP segment size for file transfer from hosts to clients.

**The previous approaches to this problem were:**

The author claims that this type of optimization has not been studied prior to this work.

**Outline the basic new approach or approaches to this problem:**

The author approaches this problem by proving there exists a network reliability factor that can be used to determine the optimal length for TCP segment size.

**Critical assumptions made include:**

Critical assumptions made by the author include that the network reliability factor for low-hop networks can be estimated by experimentation and that segment sizes must be integer multiples of the MTP.

**The performance of the techniques discussed in the paper was measured in what manner:**

The processing cost bound as a function of number of packets per TCP segment for various packet sizes and variable network reliability factors were graphed to help the reader understand the relationship between processing cost and TCP segment size for different network reliability factors.

**What background techniques are used in the paper that you are not familiar with, and how could you find out more:**

The background techniques used in the paper that I am not familiar with, but could learn more about include the quantification of all the terms defined that led to a mathematical and systematical problem analysis.

**The following terms were defined:**

MTU, maximum transferrable unit, size, instructions per byte, instructions per data block, and the processing cost upper bound were defined.

**I rate and justify the value of this paper as:**

3/5; although the concept was presented well and an example was provided for the reader, it cannot compare to a paper backed by empirical evidence. Had the author experimentally proven this, the paper would have came across as much more sound.