# Name: Kevin Kerliu

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**Paper Title:** An Experimental Evaluation of the TCP Energy Consumption

**Author Names:** Raffaele Bolla, Roberto Bruschi, Olga M. Jaramillo Ortiz, and Paolo Lago

**Year Published:** 2015

**Open questions for discussion in class:**

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| * Were the assumptions that the researchers made acceptable? For example, the fact that only the power consumption of the CPU was investigated. * What some other methods and solutions to reducing the TCP energy consumption other than the ones proposed? * Given the significance of the OS Scheduler with respect to energy consumption, how would a Windows or Linux machine compare if they were the system under test? |

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

TCP energy consumption and performance and methods to reduce the TCP energy consumption.

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

Former approaches for reducing TCP energy consumption include reducing the number of CPU operations for creating headers of packets to be transmitted using an already existing offloading mechanism at the sender side and reducing the host energy consumption by limiting the number of active-idle transitions at the CPU at the receiver side.

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

The proposed new approach includes enabling TCP segmentation offload at the sender side and enabling the coalescing mechanisms already existing at the network interface card at the receiver side.

**Critical assumptions made include:**

A critical assumption was that the research only focused on the energy consumption of the CPU, meaning that the contributions of other hardware components were omitted.

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

The performance of the techniques discussed in the paper was measured via the software and hardware probes with which the system under test was equip. The probes included a Raritan Dominion PX-5297 wattmeter, an Agilent U2356A DAQ, a software profiler called Oprofile, the “tcpdump” packet sniffer, and the “tcptrace” utility.

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

Some background techniques used in the paper were how the system under test was analyzed. To find out more, I could investigate exactly how the system under test was put together and each point of data was collected.

**The following terms were defined:**

The paper defined what C-states and P-states are in modern processors.

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

3/5! The generalizations made should have been backed with more evidence. Moreover, the visuals (graphs) were not as helpful as they could have been; most of them looked nearly the same.