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Prof. Paolo Montuschi
Editor-in-Chief
IEEE Transactions on Computers

Dear Prof. Montuschi:

I am pleased to submit an original research article entitled "Maximizing Shuffle Network Bandwidth Utilization by Application-Level Flow Scheduling" by Feng Liang, Francis C.M. Lau, Heming Cui, and Cho-Li Wang for consideration for publication in the *IEEE Transactions on Computers*. We previously explored benefits of improving the network bandwidth utilization with an application-level scheduling policy for network flows*, and this manuscript builds on our prior study to implement distributed systems that maximize the bandwidth utilization in diverse network environments.

In this manuscript, we investigate into the cause of significant network bandwidth under-utilization in distributed computer systems. Our solution schedules network flows at the application level based on monitoring results of the behavior of network protocols, equipping distributed systems with high network bandwidth utilization. Existing distributed applications in diverse fields can gain high performance in these distributed systems in diverse networks, even without specialized network devices and network protocols.

We believe that this manuscript is appropriate for publication by the *IEEE Transactions on Computers* because it concentrates on studying the communication protocol to improve the performance of software systems. Our manuscript resolves the issues how current communication protocols can create the high-network-performance distributed systems in large data centers.

This manuscript has not been published and is not under consideration for publication elsewhere. All the authors agree with submission to *IEEE Transactions on Computers*. We have no conflicts of interest to disclose.

Thank you for your consideration!

Sincerely,

Feng Liang

* Refer to: F. Liang and F. C. M. Lau, "Bashuffler: Maximizing network bandwidth utilization in the shuffle of yarn," in Proceedings of the 25th ACM International Symposium on High-Performance Parallel and Distributed Computing, ser. HPDC '16. NY, USA, 2016, pp. 281–284.