High Performance Computing group

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Prof. David A Bader
Editor-in-Chief, ACM TOPC

Erlangen, June 01, 2019

Submission of a manuscript

Dear David A Bader,

We wish to submit a manuscript entitled "A Recursive Algebraic Coloring Technique for Hardware-Efficient Symmetric Sparse Matrix Vector Multiplication" for consideration for publication in the ACM TOPC journal. The article deals with a novel coloring based approach to parallelize Symmetric Sparse Matrix Vector Multiplication (or numerical kernels) kernel having dependency. Compared to the existing coloring approaches out approach puts special emphasis on enhancing hardware efficiency and reduction of parallelization overheads. This enables our approach to gain substantial performance speedups on modern multicore systems compared to the state-of-the-art methods. Our entire performance analysis is backed by a strong performance model which ensures the quality of our method. We believe that this manuscript is well-suited for the journal as it aims in finding generic solutions to important challenges in exploiting parallelism.[1]

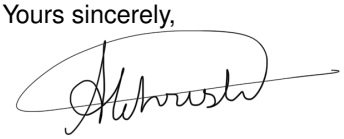
This manuscript has not been published and is not under consideration for publication elsewhere. A short five page summary of the method was submitted for 2019 ACM Student Research Competition (SRC) grand finals. As the paper received a second place it will appear in the SRC homepage in near-future.[2] However, this short paper shouldn't conflict this manuscript as it does not explain the method in detail, does not include performance modeling, and even does not go into a detailed performance analysis as done in this manuscript.

If you feel that the manuscript is appropriate for your journal, we suggest the following reviewers:

- Rich Vuduc, Georgia Institute of Technology.
- Aydin Buluç, Lawrence Berkeley National Lab.

Thank you for consideration.

Yours sincerely,



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[1] https://dl.acm.org/citation.cfm?doid=2632163.2661651

[2] https://src.acm.org/