

Linear Algebra Based Graph Analysis on RISC-V GPGPU Vortex

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Abstract—Abstract!!!!

Index Terms—GraphBLAS, Sparse Linear Algebra, Graph Analysis, GPGPU, RISC-V

I. INTRODUCTION

High-performance graph analysis, linear algebra, GPGPU
RISC-V
Contribution

- 1) !!!
- 2) !!!
- 3) !!!

II. SPLA GRAPH ANALYSIS LIBRARY

GraphBLAS inspired, linear algebra based
GPGPU, OpenCL
Algorithms: BFS, Triangles, SSSP, PageRank

III. RISC-V GPGPU VORTEX

Vortex [1]
RISC-V ISA
Configurable
Simulators, FPGA
OpenCL

IV. EVALUATION

Goals, research questions.

- RQ1 Scaling
RQ2 FPGA resources consumption
RQ3 Performance (FPGA)

Common settings: graph, algos,

A. Scaling

Design (what, how)
Graphics
Results analysis

B. FPGA resources consumption

Design (what, how)
Graphics
Results analysis

Identify applicable funding agency here. If none, delete this.

C. Performance

Design (what, how)
Graphics
Results analysis

V. CONCLUSION

Conclusion
Future work

REFERENCES

- [1] B. Tine, K. P. Yalamarthy, F. Elsabbagh, and K. Hyesoon, "Vortex: Extending the risc-v isa for gpgpu and 3d-graphics," in *MICRO-54: 54th Annual IEEE/ACM International Symposium on Microarchitecture*, ser. MICRO '21. New York, NY, USA: Association for Computing Machinery, 2021, p. 754–766. [Online]. Available: <https://doi.org/10.1145/3466752.3480128>