Simplifying Parallel Graph Processing:
Survey of Existing Platforms

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This is a survey of existing graph analytics frameworks.

1 Arya

Below are the preliminary results by running two benchmarks on the research computer Arya.

Machine Specifications

CPU	72 Core Intel Xeon E5 2699 v3
RAM	256 GB DDR4 ? MHZ

Report Card

Transport
Network Topology
Local Scheduling
Runtime Feedback
Approach
Algorithmic Considerations

Performance in millions of traversed edges per second (MTEPS)

	PowerGraph	OpenG
BFS	87.4	341
SSSP	1.09	3.08

2 Graph Processing Taxonomy

This is in the spirit of [1].

Name	Type	HPC	Parallelism	Arch.	Free	Source	Notes
PowerGraph	Framework	"yes"	both	CPU	yes	[2]	1

References

[1] DOEKEMEIJER, N., AND VARBANESCU, A. L. A survey of parallel graph processing frameworks. Tech. rep., Delft University of Technology, 2014.

[2] GONZALEZ, J. E., LOW, Y., GU, H., BICKSON, D., AND GUESTRIN, C. Powergraph: Distributed graph-parallel computation on natural graphs. In *Presented as part of the 10th USENIX Symposium on Operating Systems Design and Implementation (OSDI 12)* (Hollywood, CA, 2012), USENIX, pp. 17–30.

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[1]The current version is a closed-source product by Turi though PowerGraph v2.2 is on Github.