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Technical Report

Benchmarking Hardware for Accelerating Intelligence and Security Graph Problems

Kent O'Sullivan, University of Maryland, osullik@umd.edu

Amir Ghaemi, Applied Research Laboratory for Intelligence and Security, aghaemi@arlis.umd.edu

Nandini Ramachandran, University of Maryland, nandinir@umd.edu

Vladimir Rife, Applied Research Laboratory for Intelligence and Security, vrife@umd.edu

William Regli, University of Maryland, regli@umd.edu

Project Github: https://github.com/UMD-ARLIS/Graph-Benchmarking-Project

ReadTheDocs: https://graph-benchmarking.readthedocs.io/en/latest/

December 18, 2023

Abstract

- Benchmarking Example 1 Introduction 2 Benchmark Architecture 7 Contributing Benchmark Data References 8 Reference Implementations 9 Glossary 4.1 Requirements 4.2 **Problem Domains** curity. 4.2.1**Community Detection BFS** Breadth-First Search CPU Central Processing Unit 4.2.2Subgraph Matching **GPU** Graphics Processing Unit Reference Implementations **HIVE** Hierarchical Identify Verify Exploit 4.3.1Louvain Algorithm **KGA** Knowledge Graph Analytics 4.3.2VF3
- 5 Telemetry

ARLIS Applied Research Laboratory for Intelligence and Se-**DARPA** Defense Advanced Research Projects Agency

PIUMA Programmable Integrated Unified Memory Architec-

SGM Sub Graph Matching

TEPS Traversed Edges Per Second

 $\mathbf{TEPS/W}$ Traversed Edges Per Second Per Watt