GrAPL 2021

GrAPL 2021: Workshop on Graphs, Architectures, Programming, and Learning

May 17, 2021
Co-Located with IPDPS 2021
Virtual Conference

GrAPL is the result of the combination of two IPDPS workshops:

GABB: Graph Algorithms Building Blocks
GraML: Workshop on The Intersection of Graph Algorithms and Machine Learning

Due to the perduring pandemic situation, IPDPS 2021 and its workshops will be held virtually.

The GrAPL organizing committee has planned an exciting online program, consisting in two LIVE 120-minute sessions on May 17 (starting at 8:00 AM PDT, 3:00 PM UTC, 5:00 PM CET) with keynotes and live Q&A for each accepted paper. The schedule below contains links to the abstracts of the keynote talks and to 3 minutes lighting talk videos (available on or before May 14) of accepted papers pitching the GrAPL community to read the papers and prepare to ask questions at the online sessions.

Register at the IPDPS website to get instructions on how to access papers and static presentations for GrAPL: http://www.ipdps.org

To attend the Zoom Sessions, we ask participants to watch the videos, read the papers, prepare questions, and register in advance at the following link: https://tinyurl.com/GrAPL-2021-Registration
The organizing committee will then provide the link to the session.

Note: to access the papers, user id and password, provided to registered IPDPS attendees, are required.

Program

Time	Event
8:00-8:05	Welcome and Introduction

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	Sparse Adjacency Matrices at the Core of Graph Databases: GraphBLAS the Engine Behind RedisGraph Property Graph Database Roi Lipman (Redis Labs)
8:50 - 9:55	LAGraph: Linear Algebra, Network Analysis Libraries, and the Study of Graph Algorithms [slide] [paper] *Gábor Szárnyas (CWI Amsterdam), David A. Bader (New Jersey Institute of Technology), Timothy A. Davis (Texas A&M), James Kitchen (Anaconda), Timothy G. Mattson (Intel), Scott McMillan (SEI, Carnegie Mellon), Erik Welch (Anaconda)* Introduction to GraphBLAS 2.0 [slide] [paper] *Benjamin A. Brock (UC Berkeley), Aydın Buluç (LBNL, UC Berkeley), Timothy G. Mattson (Intel), Scott McMillan (SEI, Carnegie Mellon), José E. Moreira (IBM)* Mathematics of Digital Hyperspace [slide] [paper] *Jeremy Kepner (MIT Lincoln Laboratory), Timothy Davis (Texas A&M University), Vijay Gadepally (MIT Lincoln Laboratory), Hayden Jananthan (MIT Lincoln Laboratory, Vanderbilt), Lauren Milechin (MIT)* SPbLA: The Library of GPGPU-Powered Sparse Boolean Linear Algebra Operations [slide] [paper] *Egor Orachev (St. Petersburg St. Univ., JetBrains Research), Maria Karpenko (ITMO Univ.), Artem Khoroshev (BIOCAD), Semyon Grigorev (St. Petersburg St. Univ, JetBrains Research)* PIGO: A Parallel Graph Input/Output Library [slide] [paper] *Kasimir Gabert (Georgia Tech), Ümit V. Çatalyürek (Georgia Tech)*
9:55~10:15	Break
10:00~12:00	**Session 2: Graph Machine Learning, Models and Applications**
10:15~11:00	Keynote 2 Label Propagation and Graph Neural Networks *Austin Benson (Cornell University)*
11:00 - 11:55	Hybrid Power-Law Models of Network Traffic [slide] [paper] *Pat Devlin (Yale), Jeremy Kepner (MIT), Ashley Luo (MIT), Erin Meger (Univ. du Québec à Montréal)* Characterizing Job-Task Dependency in Cloud Workloads Using Graph Learning [slide] [paper] *Zhaochen Gu (Univ. N. Texas), Sihai Tang (Univ. N. Texas), Beilei Jiang (Univ. N. Texas), Song Huang (Allstate), Qiang Guan (Kent State), Song Fu (Univ. N. Texas)* Co-design of Advanced Architectures for Graph Analytics using Machine Learning [slide] [paper] *Kuldeep Kurte (ORNL), Neena Imam (ORNL), Ramakrishnan Kannan (ORNL), S. M. Shamimul Hasan (ORNL), Srikanth Yoginath (ORNL)* Sparse Binary Matrix-Vector Multiplication on Neuromorphic Computers [slide] [paper] *Catherine D. Schuman (ORNL), Bill Kay (ORNL), Prasanna Date (ORNL), Ramakrishnan Kannan (ORNL), Piyush Sao (ORNL), Thomas E. Potok (ORNL)*
11:55~12:15	Community Open Discussion