GraML18
Second Workshop on the Intersection of Graph Algorithms and Machine Learning

We are delighted to introduce you to the second edition of GraML, a new Workshop series that got started in 2017 and focuses on the intersection of graph algorithms and machine learning.

This second edition of GraML happens at a time in which we are experiencing an exponential growth in the number of proposed graph and machine learning solutions for a variety of problems. With explosive growth come claims and counterclaims as to which approach---graph algorithms or machine learning---is best. In some cases, old problems are recast in the alternate approach in the *hope* of finding a better solution; in other cases, an approach is chosen to solve a new problem without a sound theoretical basis for success.

The conundrum is that both graph algorithms and machine learning can solve many real-world problems, and that their domains intersect, but are not equivalent. Many analytic workloads require both approaches: graphs to understand relationships and organizational structures, and machine-learning methods to identify signature features.

GraML aspires to be a theoretical venue that aims at investigating the interaction between graph algorithms and machine learning and its relationship with other venues that deal with these two approaches. The theoretical applicability aspect impacts the more practical tractability aspect in terms of complexity, performance, and quality of solution, enabling a more informed and deeper discussion of tools implementation, scaling, and integration in mixed workflows.

We believe that IPDPS is the perfect venue for GraML. IPDPS has a stronger theoretical emphasis than most other venues dedicated to parallel computation. It hosts long running workshops that provide insightful practical perspectives on the application of parallel computation to graph methods and/or machine learning. GraML is positioned to bridge the theoretical focus of the main conference to the more practical aspects discussed in the more related workshop, providing a unique point of view.

For this second edition of GraML, we accepted 4 out of the 5 submitted papers. The accepted papers discuss works on neural networks and graph algorithms on next generation processors, vector embedding of a graph and its applications, network similarity prediction in time-evolving graphs, and classification and anomaly detection in traffic patterns of New York city taxis. The opening keynote by Dr. Nesreen Ahmed (Intel Research Labs, US) on graph learning and mining sets the tone for these contributed presentations. Finally, the closing debate, involving Dr. Bruce Hendrickson (Lawrence Livermore National Laboratory, US), Prof. Ananth Kalyanaraman (Washington State University, US), Dr. Johannes Langguth (Simula, Norway) and Dr. Sreenivas Rangan Sukumar (Cray, US), will pitch the two sides (machine learning and graph algorithms) against each other, in the hope of attaining enhanced understanding.

Organizing a workshop is a team effort. We thank the authors for their interest in GraML and their submissions. We thank our technical program committee members for carefully evaluating the papers and providing insightful comments to the authors. We thank our invited speaker and our panelists for accepting our invitations. We thank the IPDPS organizing committee for selecting GraML and the proceedings chair for allowing us to have these proceedings archived.

We hope you will enjoy the workshop, and find the papers collected in these proceedings interesting and thought provoking.

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