Welcome to the 2017 IEEE Workshop on Parallel and Distributed Processing for Computational Social Systems (ParSocial). The ParSocial workshop, which was established in 2016, provides a platform for interdisciplinary and transdisciplinary research, of significant impact, spanning areas such as computer science, social science, applied mathematics and computer engineering. Pursuant with this objective, the second iteration of the workshop highlights advances from diverse sub-domains lying at the intersection of computational social systems and parallel and distributed processing.

The workshop program for 2017 consists of a keynote address and nine research papers, including two invited research papers. Dr. Boleslaw Szymanski, from Rensselaer Polytechnic Institute, is the keynote speaker with a talk titled “Large Scale Community Detection in Social and Bio-Medical Networks”. The talk addresses the challenges of designing parallel algorithms for large scale network analysis, with community detection as the application domain. From the area of social media modeling and analysis, we have an invited paper titled “Predicting Viral News Events in Online Media” by Lu et al, which looks at the important problem of information aggregation and dissemination when the underlying network topology is unknown or incompletely known. The authors have provided a parallel algorithm that derives the underlying embeddings of nodes in community structures, to predict viral social media events. Two papers in the workshop focus on shared memory algorithms for graph theoretic problems. The first paper, titled “Fast Parallel Graph Triad Census and Triangle Counting on Shared-memory Platforms” by Parimalarangan et al, propose parallel algorithms for the triad census and triad counting problems in large networks on shared memory platforms, and the second paper titled “Parallel k-core Decomposition on Multicore Platforms” by Kabir et al provides a new shared memory parallel algorithm for a key social network analysis measure called k-core decomposition. Santos et al, in their paper titled “Efficient Anytime Anywhere Algorithms for Vertex Additions in Large and Dynamic Graphs”, provides algorithm designs for another problem in social network analysis, namely closeness centrality, while dealing with the challenge of network dynamism in the form of node additions. The workshop has two papers that addresses a challenge in the area of agent based modeling, namely scaling up the models for real world problems. While the paper titled “Endogenous Social Networks from Large-Scale Agent-Based Models” by Tatara et al focuses on a methodology to generate endogenous social networks from large-scale simulation data, Cordasco et al proposes an approach for work partitioning in agent based simulations, along with a classification taxonomy of strategies, in their paper titled “Work Partitioning on Parallel and Distributed Agent-Based Simulation”. From the machine learning sub-domain, Cybenko, in an invited short paper, titled “Parallel Computing for Machine Learning in Social Network Analysis“, discusses how the convergence of three technological trends is advancing the state of the art in deep learning. Finally, Hsu et al, in their paper “Accelerating Topic Exploration of Multi-Dimensional Documents” provide a strategy to speed up topic modeling in large unstructured document datasets.

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