Distributed Systems and Algorithms

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Parallel computing is increasingly exposed to the development and challenges of distributed systems, such as asynchrony, long latencies, network partitions, failures, disconnected operations, heterogeneity and protocol standardization. Furthermore, distributed systems are becoming larger, more diverse and more dynamic (changing topology, highly dynamic number of participants). This Euro-Par topic provides a forum for research and practice about new advances in distributed computing and distributed algorithms. Submissions were encouraged across the whole area with emphasis on design and practice of distributed algorithms, scalability, concurrency, performance evaluations, and self-organized distributed systems.

This year nineteen papers were submitted to Topic 8 representing a wide spectrum of research areas in distributed computing. Of the nineteen submissions, seven have been accepted for publication. Each paper was reviewed by four reviewers (two papers received only three reviews).

The accepted papers cover a wide range of challenges in the distributed system and algorithms topic. Three papers address fundamental distributed algorithm problems: M. Raynal and D. Imbs explore progress conditions in asynchronous read/write systems, R. Baldoni et al. introduce a new shared set object suitable for synchronous dynamic systems, and C. Johnen and F. Mekhaldi propose a self-stabilizing construction of bounded size weight-based clusters. Two papers propose and evaluate new distributed protocols: K-T. Moeller et al. propose an adaptive technique to avoid false sharing in memory transactions whereas T. Ropars and C. Morin evaluate a new event logger on multi-core systems. Finally, two papers focus on specific problems: S. Gorlatch and O. Scharf describe a distributed simulation of the dynamics of crowds inside closed buildings and J. Piquer and J. Bustos-Jiménez propose and evaluate a new frame allocation for networked cameras.

The paper “The x-Wait-freedom Progress Condition” by Michel Raynal and Damien Imbs was selected as distinguished paper.

We would like to take the opportunity of thanking the authors who submitted a contribution, the Euro-Par Organizing Committee, and the external referees, whose efforts have made this conference and this topic possible.