

## EDITORIAL PREFACE

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The first issue of the sixth volume comprises four articles, selected after a careful review process, and is organized as follows.

In the first article, Mohammed and Ibrahim explain that adopting and using ICT in the public sector has many challenges related to implementing e-government initiatives successfully. Cloud computing may offer a new chance to address many of these challenges by providing elastic scalable, customized, and highly available environments. By analyzing some cases, this paper extracts the main drivers of cloud computing adoption in the public sector organizations. Cost saving and the need for scalability are the main common factors that drive public sector organizations to move their services to the cloud.

In the second article, Zhao is concerned with Fast Paxos, which is one of the latest variants of the Paxos algorithm for distributed consensus. In this article, the authors present the theory, implementation, and a comprehensive performance evaluation of the Fast Paxos algorithm. The theory is described in an easier-to-understand way compared with the original article by Lamport. In particular, the authors derive an easy-to-implement value selection rule for the coordinator. In the implementation of Fast Paxos for state-machine replication, the authors show that a number of additional mechanisms are needed to cope with practi-

cal scenarios. Their experiments reveal that Fast Paxos is most appropriate for use in a single-client configuration. The presence of two or more concurrent clients even in a local area network would incur frequent collisions, which leads to Fast Paxos performing worse than Classic Paxos.

In the third article, Sajid and Raza focus on HPC resource requirement prediction towards improved scheduling performance while reducing the resource waste. In this paper, the authors present an analytical model estimating the required resources for the modular job execution. The analysis identifies the number of processors required and the maximum and minimum bounds on the turnaround time and energy consumed. Simulation study reveals that the scheduling algorithms integrated with the proposed analytical model helps in improving the average throughput and the average energy consumption of the system.

In the fourth paper, Mohammad focuses on the performance of non-contiguous allocation using a real workload trace. Specifically, in this paper, the performance of the well-known Greedy Available Busy List (GABL) non-contiguous allocation strategy for 2D mesh-connected multicomputers is revisited considering several important job scheduling strategies based on a real workload trace, and the results are compared to those obtained from using a

synthetic workload. The scheduling strategies used are the First-Come-First-Served (FCFS), Out-of-Order (OO), and Window-Based job scheduling strategies. Extensive simulation results based on synthetic and real workload models indicate that the Window-Based job scheduling strategy can improve both overall system performance and fairness by adopting a large job scheduling window.

The editor wishes to thank the authors for their contribution to this issue and the reviewers for their useful suggestions and feedback to the authors. I wish readers find this issue useful in their research and academic activity.

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