Special Issue: "Performance evaluation of communications in distributed systems and Web based service architectures"

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This special issue is devoted to performance evaluation of communications in distributed systems and Web based service architectures. Due to the rapid evolution of IP networks with different network access (Optical, Ethernet, 3G, LTE, WIMAX, WIFI,...), computer Systems (PC, smart phones, Ipads) and Web based services architectures, performance evaluation becomes essential but still a complex issue in general. The complexity is due to the heterogeneity of those systems and the diversity of considered applications.

The goal of the performance evaluation is analyzing and dimensioning those architectures in order to provide the Quality of Service (QoS) for the considered services and to maximize the bandwidth utilization.

Indeed, several challenges remain to be resolved before these systems become a commodity. Ensure QoS for web-based systems as well as distributed and mobile systems and evaluating their communication performance is a real challenge to design them.

Quantitative analysis can be very difficult and may be intractable because of the state space explosion. This is why recently new methodologies or/and tools emerged for these kinds of complex systems, such as Stochastic Automata Networks, Stochastic bounds, PEPA, just to mention a few.

This special issue selected the best papers of the IEEE workshop PEDISWESEA that was held in Riccione, Italy in 2010 and co-located with IEEE ISCC. These papers cover recent studies on the performance evaluation of communications in distributed systems and Web based service archi-

tectures. We hope you will find set of papers interesting as much as we have done.

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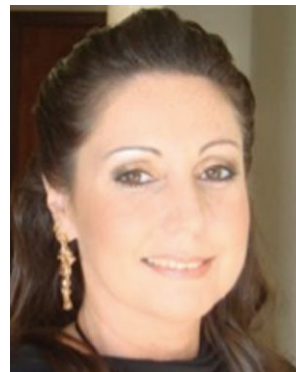
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