Editorial

This special issue presents a selection of papers mainly presented at the CESA'06 **(Computational Engineering in Systems Applications)** held 4-6/10/2006 in Beijing, China. CESA is a conference dedicated to the modelling, analysis and control of manufacturing systems. It attracts both academics and industrials involved in research and applications of discrete event systems, hybrid systems and real-time systems. The aim of CESA conference is to create synergies of techniques originated from control scientists and computer scientists. It reflects the state-of-the-art contributions in the computation engineering in systems applications.

In terms of applications, CESA covers a wide range of major challenges from various industries such as automated production systems, telecommunications, embedded systems, mobile systems. Modeling, analysis and control of these ever complex systems require joint effort of control scientists and computer scientists.

CESA has a respectable selection rate and the average acceptation ratio is about 65% based on peer reviews of full paper submissions.

This special issue presents a collection of ten expanded papers of communications presented at the CESA'06 conference and extended with two papers related to the same topics. These papers were selected based on the recommendation of the program committee of CESA'06 and another round of independent reviews. The special issue contains four papers on supervisory control, one paper on optimization of job-shops assembling tasks, three papers in modeling and control of flexible manufacturing systems, one paper in monitoring of discrete event systems and one paper which presents a synthesis supervisory synthesis tool for time discrete event systems.

The paper of Chen and Wonham presents a supervisory control method based on vector synchronous product of automata.

The paper of Jerbi, Collard Dutilleul, Craye and Benrejeb deals with the localization of the time disturbances in tolerant multi-product job-shops without assembling tasks.

The paper of Lee, Kim and Lee addresses the problem of deadlock based on Petri nets analysis for the resource share.

The paper of Sava, Achour, Rezg and Leahu presents a control synthesis tool for time discrete event systems.

Supervisory control for dynamic forbidden states for partially controllable and partially observable discrete event systems is addressed in the paper of Achour and Rezg. This paper proposes a design methodology for Petri ney controllers for the forbidden state transition problems focuses on the dymanic forbidden state problems a generalized Petri net model.

The paper of Deschamps, Henry and Zamaï proposes a pragmatic approach for the control of discrete event systems based on Petri net models.

The paper of Kamach, Piétrac and Niel deals with operating mode management of discrete events systems and based on supervisory control approach.

The paper of Ashley and Hollaway deals with controller synthesis techniques using condition system to control and to reconfigure the plant under failure.

The paper of Toguyeni, Dangoumau and Lee, addresses the problem of the control for a configurable manufacturing systems.

The paper of Gouyoun, Petin and Morel deals with the problem of product-driven control for the flexible assembly cell.

The preparation of this special issue received great help from the control and computer communities. First we would like to thank the reviewers whose peer reviews allowed us to ensure the quality of this special issue. We are grateful to Florin Gheorghe Filip, the editor in chief of SIC and to Andrei Niculescu for extending the editorial delay for the preparation of this special issue.

Etienne Craye and Nidhal Rezg

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