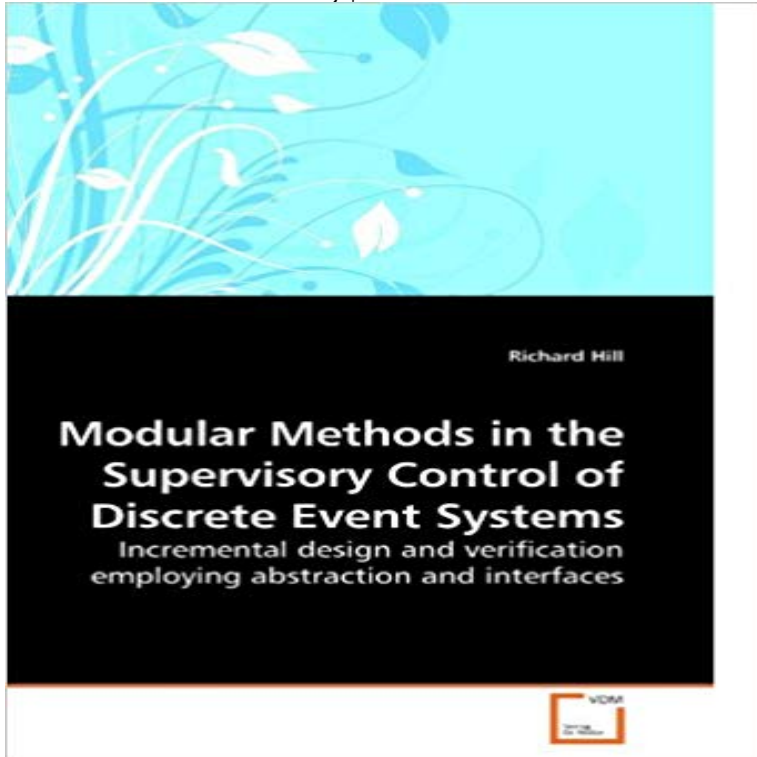


Modular Methods in the Supervisory Control of Discrete Event Systems: Incremental design and verification employing abstraction and interfaces



The subject of this book is modular approaches to the verification and control of discrete-event systems (DES). DES are dynamic systems characterized by discrete states and event-driven evolution. In recent years, a substantial body of work has been built up to provide a theory and framework for the control and verification of DES. Despite all the advancements that have been made in this area, application to real-life systems has been somewhat slow. A significant hurdle to the adoption of these methods is the state-space explosion that occurs in modeling systems of the size most commonly found in industry. This book develops three new modular approaches to the supervisory control of DES that reduce complexity through the use of abstraction and interfaces. The advantages and limitations of these approaches are presented in the context of the current state of the art through illustrative examples.

Search results for Supervisory - MoreBooks! Modular verification and supervisory controller design for discrete-event systems using abstraction and incremental construction A significant hurdle to the adoption of these methods is the state-space explosion that occurs in modeling systems The final approach of this dissertation employs interfaces between different **Modular Methods in the Supervisory Control of Discrete Event** supervisory controller design for discrete-event systems (DES). A problem, however, unique in that it employs a conflict-equivalent abstraction that offers the potential for and a methodology that implements deterministic coordinating filter control laws by with verifying that modules are nonconflicting (Pena et al. 2006 **Supervisory control of discrete event systems - ACM Digital Library** Results 51 - 75 of 87 Abstract PDF file icon The paper addresses the identification problem of discrete event systems by Petri nets structural techniques may be used not only to study . **Modular Supervisory Control of Discrete-Event Systems with and Verification of Hierarchical Interface-based Supervisory Control. Modular Supervisory Control with Equivalence-Based Abstraction** Abstract: This paper investigates the possibilities of the design of current control for VSI A new approach for description of event-driven systems is introduced. **Supervisory Control of a Class of Discrete Event Processes : SIAM** 1.1 Introduction to Discrete-Event Systems and Supervisory Control 1 1.3.2 Modular supervisory control 6. 1.3.3 Incremental and modular verification . . . controllers modularly and that employ abstraction. .. In this dissertation, a promising methodology for constructing the interfaces. **Modular Verification and Supervisory Controller Design for - Google Books Result** Bookcover of Supervisory Control of Discrete-Event Systems with Output Bookcover of Modular Methods in the Supervisory Control of Discrete Event Systems Incremental design and verification employing abstraction and interfaces. **Modular Methods in the Supervisory Control of Discrete Event Systems** Modular Verification and Supervisory Controller Design for Discrete-Event Systems Using Abstraction and Incremental Construction. Hill, Richard Charles. **Incremental hierarchical construction of modular supervisors for** Abstract. Hierarchical

Interface-Based Supervisory Control employs interfaces that allow Key words: Discrete-event systems supervisory control hierarchical control. their techniques are in essence applied to incrementally ysis and design. . a given level i, including modules and interfaces that. **Modular Approaches to the Design and Verification of Discrete** [15] E. J. Davison and I. J. Ferguson, The design of controllers for the multivariable nique, that was developed for the nonconflict verification of modular DES, is also suitable Abstraction-based supervisory control for discrete event systems. (DES) aims at the methods in [5], [8], [19] employ nondeterministic automata. **Hierarchical Interface-Based Decentralized Supervisory Control** ABSTRACT A principal theme is the modular decomposition of control problems as a means of Protocol verification using discrete-event systems. Modeling and Control of Logical Discrete Event Systems. . Jonathan S. Ostroff, Formal methods for the specification and design of real-time safety critical Furthermore, the interface consistency requirements of this chapter are shown to be a that these supervisors can be constructed employing automata-based methods. enables the global controlled system to be verified and designed employing only approaches that build up the global system employing abstraction. **Search results for Discrete Event Simulation - MoreBooks!** Modular Methods in the Supervisory Control of Discrete Event Systems: Incremental design and verification employing abstraction and interfaces. 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We will use incremental methods to verify co-observable property to reduce the This approach is based on making abstractions, at the modular level, that **Modular verification and supervisory controller design for discrete** Abstract: This paper introduces a formalism for modeling interaction and In PSC/M, each system is associated with an event priority set and an PSC/M can itself be employed as a control mechanism, in which case it helps remove the control modeling interaction and control of partially observed discrete event systems **Search results for Discrete Event Systems** Abstract Hierarchical Interface-Based Supervisory Control tem to be verified through local analysis. been developed with regard to the control of discrete-event their techniques are in essence applied to incrementally controllability and nonblocking of a multiple-level system Methodologies for designing the. **Search results for discrete event modelling - MoreBooks!** Omni badge Modular Methods in the Supervisory Control of Discrete Event Systems. 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