

Petri Net Synthesis for Discrete Event Control of Manufacturing Systems



Petri Net Synthesis for Discrete Event Control of Manufacturing Systems (The Springer International Series in Engineering and Computer Science Book 204)

by MengChu Zhou

★★★★☆ 4.5 out of 5

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Screen Reader: Supported



Petri nets are a powerful tool for modeling and analyzing discrete event systems. They have been used successfully in a wide variety of applications, including manufacturing systems. Petri net synthesis is the process of creating a Petri net model of a system that accurately captures its behavior. This process can be challenging, especially for complex systems.

This book provides a comprehensive guide to the synthesis of Petri nets for the discrete event control of manufacturing systems. It covers the latest advances in the field, including the use of Petri nets for modeling, analysis, and control of complex manufacturing systems.

Modeling Manufacturing Systems with Petri Nets

The first step in controlling a manufacturing system is to model it. Petri nets are a well-suited tool for this task, as they can represent the concurrency and synchronization of events in a system.

This book provides a detailed overview of the different types of Petri nets and how they can be used to model manufacturing systems. It also includes a number of case studies that show how Petri nets have been used to model real-world manufacturing systems.

Analysis of Petri Net Models

Once a Petri net model of a manufacturing system has been created, it can be analyzed to identify potential problems. This analysis can be done using a variety of techniques, including simulation, reachability analysis, and model checking.

This book provides a detailed overview of the different analysis techniques that can be used to analyze Petri net models. It also includes a number of case studies that show how these techniques have been used to identify problems in real-world manufacturing systems.

Control of Manufacturing Systems with Petri Nets

Once a Petri net model of a manufacturing system has been created and analyzed, it can be used to control the system. This can be done using a variety of techniques, including state-based control, event-based control, and hybrid control.

This book provides a detailed overview of the different control techniques that can be used to control manufacturing systems with Petri nets. It also

includes a number of case studies that show how these techniques have been used to control real-world manufacturing systems.

This book provides a comprehensive guide to the synthesis of Petri nets for the discrete event control of manufacturing systems. It covers the latest advances in the field, including the use of Petri nets for modeling, analysis, and control of complex manufacturing systems.

This book is an essential resource for anyone who wants to learn more about Petri nets and their application to the control of manufacturing systems.



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