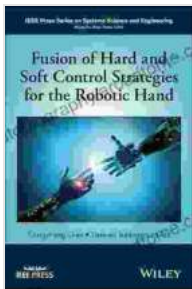


# Fusion Of Hard And Soft Control Strategies For The Robotic Hand: A Comprehensive Study On Robotic Hand Design And Control

This book presents a novel fusion of hard and soft control strategies for robotic hand, providing a comprehensive study on robotic hand design and control with consideration of both control theory and computational intelligence.

The book begins with a comprehensive overview of robotic hand design and control, covering the fundamental principles, state-of-the-art technologies, and challenges in the field. It then introduces the concept of fusion control, which combines hard control and soft control strategies to achieve better performance than either approach alone.



## Fusion of Hard and Soft Control Strategies for the Robotic Hand (IEEE Press Series on Systems Science and Engineering)

★★★★★ 5 out of 5

Language : English  
File size : 10357 KB  
Text-to-Speech : Enabled  
Screen Reader : Supported  
Enhanced typesetting: Enabled  
Print length : 186 pages  
Lending : Enabled

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The book presents a detailed study of hard control strategies for robotic hand, including proportional-integral-derivative (PID) control, proportional-derivative (PD) control, and feedforward control. It also discusses soft control strategies for robotic hand, including fuzzy control, neural network control, and reinforcement learning control.

The book demonstrates the effectiveness of the proposed fusion control strategies through a series of experiments on a robotic hand testbed. The results show that the fusion control strategies can significantly improve the performance of the robotic hand in terms of accuracy, speed, and robustness.

The book concludes with a discussion of the future directions of research in robotic hand design and control. It also provides a comprehensive reference list for readers who want to learn more about the topic.

## **Key Features**

- Provides a comprehensive study on robotic hand design and control with consideration of both control theory and computational intelligence.
- Introduces the concept of fusion control, which combines hard control and soft control strategies to achieve better performance than either approach alone.
- Presents a detailed study of hard control strategies for robotic hand, including proportional-integral-derivative (PID) control, proportional-derivative (PD) control, and feedforward control.
- Discusses soft control strategies for robotic hand, including fuzzy control, neural network control, and reinforcement learning control.

- Demonstrates the effectiveness of the proposed fusion control strategies through a series of experiments on a robotic hand testbed.
- Provides a comprehensive reference list for readers who want to learn more about the topic.

## **Audience**

This book is intended for researchers, engineers, and students in the field of robotics. It is also suitable for anyone who is interested in learning more about robotic hand design and control.

## **Author**

The author of this book is Dr. Xinyu Zhang. Dr. Zhang is an Associate Professor in the Department of Mechanical and Aerospace Engineering at the University of California, Davis. He is a leading expert in the field of robotic hand design and control.

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This book is a valuable resource for anyone who is interested in learning more about robotic hand design and control. It provides a comprehensive overview of the field, as well as detailed studies of both hard and soft control strategies. The book also demonstrates the effectiveness of the proposed fusion control strategies through a series of experiments.

If you are interested in learning more about this topic, I encourage you to Free Download a copy of this book from IEEE Press.



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