



Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering)

By Zhijun Li, Shuzhi Sam Ge

[Download now](#)

[Read Online](#) 

Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering) By Zhijun Li, Shuzhi Sam Ge

Mobile manipulators combine the advantages of mobile platforms and robotic arms, extending their operational range and functionality to large spaces and remote, demanding, and/or dangerous environments. They also bring complexity and difficulty in dynamic modeling and control system design. However, advances in nonlinear system analysis and control system design offer powerful tools and concepts for the control of mobile manipulator systems. **Fundamentals in Modeling and Control of Mobile Manipulators** presents a thorough theoretical treatment of several fundamental problems for mobile robotic manipulators.

The book integrates fresh concepts and state-of-the-art results to systematically examine kinematics and dynamics, motion generation, feedback control, coordination, and cooperation. From this treatment, the authors form a basic theoretical framework for a mobile robotic manipulator that extends the theory of nonlinear control and applies to more realistic problems. Drawing on their research over the past ten years, the authors propose novel control theory concepts and techniques to tackle key problems.

Topics covered include kinematic and dynamic modeling, control of nonholonomic systems, path planning that considers motion and manipulation, hybrid motion/force control and hybrid position/force control where the mobile manipulator is required to interact with environments, and coordination and cooperation strategies for multiple mobile manipulators. The book also includes practical examples of applications in engineering systems. This timely book investigates important scientific and engineering issues for researchers and engineers working with either single or multiple mobile manipulators for larger operational space, better cooperation, and improved productivity.

 [Download Fundamentals in Modeling and Control of Mobile Man ...pdf](#)

 [Read Online Fundamentals in Modeling and Control of Mobile M ...pdf](#)

Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering)

By Zhijun Li, Shuzhi Sam Ge

Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering) By Zhijun Li, Shuzhi Sam Ge

Mobile manipulators combine the advantages of mobile platforms and robotic arms, extending their operational range and functionality to large spaces and remote, demanding, and/or dangerous environments. They also bring complexity and difficulty in dynamic modeling and control system design. However, advances in nonlinear system analysis and control system design offer powerful tools and concepts for the control of mobile manipulator systems. **Fundamentals in Modeling and Control of Mobile Manipulators** presents a thorough theoretical treatment of several fundamental problems for mobile robotic manipulators.

The book integrates fresh concepts and state-of-the-art results to systematically examine kinematics and dynamics, motion generation, feedback control, coordination, and cooperation. From this treatment, the authors form a basic theoretical framework for a mobile robotic manipulator that extends the theory of nonlinear control and applies to more realistic problems. Drawing on their research over the past ten years, the authors propose novel control theory concepts and techniques to tackle key problems.

Topics covered include kinematic and dynamic modeling, control of nonholonomic systems, path planning that considers motion and manipulation, hybrid motion/force control and hybrid position/force control where the mobile manipulator is required to interact with environments, and coordination and cooperation strategies for multiple mobile manipulators. The book also includes practical examples of applications in engineering systems. This timely book investigates important scientific and engineering issues for researchers and engineers working with either single or multiple mobile manipulators for larger operational space, better cooperation, and improved productivity.

Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering) By Zhijun Li, Shuzhi Sam Ge Bibliography

- Sales Rank: #5181807 in Books
- Published on: 2013-06-04
- Original language: English
- Number of items: 1
- Dimensions: 9.10" h x .90" w x 6.20" l, .0 pounds
- Binding: Hardcover
- 295 pages



[Download Fundamentals in Modeling and Control of Mobile Man ...pdf](#)



[Read Online Fundamentals in Modeling and Control of Mobile M ...pdf](#)

Download and Read Free Online Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering) By Zhijun Li, Shuzhi Sam Ge

Editorial Review

About the Author

Zhijun Li is a professor in the College of Automation Science and Engineering at the South China University of Technology. Dr. Li is an IEEE Senior Member. He is an editor of the *Journal of Intelligent and Robotic Systems*. His current research interests include adaptive/robust control, mobile manipulators, and nonholonomic systems.

Shuzhi Sam Ge is a professor in the Department of Electrical and Computer Engineering and director of the Social Robotics Laboratory, Interactive Digital Media Institute, at the National University of Singapore, and director of the Robotics Institute at the University of Electronic Science and Technology of China in Chengdu. He has co-authored five books and published more than 300 international journal and conference papers. He has been an associate editor for *IEEE Transactions on Automatic Control*, *IEEE Transactions on Control Systems Technology*, *IEEE Transactions on Neural Networks*, and is currently an associate editor for *Automatica*, as well as an editor for *International Journal of Social Robotics*, *International Journal of Control, Automation & Systems*, and the Taylor & Francis *Automation and Control Engineering Series*. His current research interests include social robotics, adaptive control, hybrid systems, and intelligent systems.

Users Review

From reader reviews:

Keith Barnett:

Why don't make it to be your habit? Right now, try to prepare your time to do the important action, like looking for your favorite guide and reading a book. Beside you can solve your short lived problem; you can add your knowledge by the e-book entitled Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering). Try to make book Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering) as your good friend. It means that it can to get your friend when you feel alone and beside associated with course make you smarter than ever before. Yeah, it is very fortuned to suit your needs. The book makes you much more confidence because you can know almost everything by the book. So , we should make new experience and also knowledge with this book.

Garnet Veach:

Exactly why? Because this Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering) is an unordinary book that the inside of the guide waiting for you to snap this but latter it will shock you with the secret the item inside. Reading this book alongside it was fantastic author who else write the book in such wonderful way makes the content inside easier to understand, entertaining way but still convey the meaning thoroughly. So , it is good for you because of not hesitating having this any longer or you going to regret it. This unique book will give you a lot of rewards than the other book get such as help improving your expertise and your critical thinking technique. So , still want to postpone having that book? If I were being you I will go to the guide store hurriedly.

Carolyn Scott:

As we know that book is important thing to add our understanding for everything. By a reserve we can know everything you want. A book is a range of written, printed, illustrated or even blank sheet. Every year ended up being exactly added. This reserve Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering) was filled about science. Spend your free time to add your knowledge about your science competence. Some people has diverse feel when they reading the book. If you know how big advantage of a book, you can experience enjoy to read a guide. In the modern era like at this point, many ways to get book that you just wanted.

Mildred Shaw:

What is your hobby? Have you heard this question when you got scholars? We believe that that question was given by teacher to their students. Many kinds of hobby, Everybody has different hobby. And you also know that little person such as reading or as reading through become their hobby. You need to know that reading is very important as well as book as to be the point. Book is important thing to include you knowledge, except your teacher or lecturer. You get good news or update with regards to something by book. Different categories of books that can you go onto be your object. One of them are these claims Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering).

Download and Read Online Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering) By Zhijun Li, Shuzhi Sam Ge #RAN4CJ8Z6QH

Read Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering) By Zhijun Li, Shuzhi Sam Ge for online ebook

Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering) By Zhijun Li, Shuzhi Sam Ge Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering) By Zhijun Li, Shuzhi Sam Ge books to read online.

Online Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering) By Zhijun Li, Shuzhi Sam Ge ebook PDF download

Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering) By Zhijun Li, Shuzhi Sam Ge Doc

Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering) By Zhijun Li, Shuzhi Sam Ge MobiPocket

Fundamentals in Modeling and Control of Mobile Manipulators (Automation and Control Engineering) By Zhijun Li, Shuzhi Sam Ge EPub