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Spong and Hutchinson were EIC's in top control and robotics
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If you want to lay solid foundation in KDC, this is the book to
begin with. PS: I am a postdoc at CMU Robotics Institute.

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No other text that I have seen offers a better complete overview of modern robotic manipulation and robot control." -- Bradley Bishop, United States Naval Academy Based on the highly successful classic, Robot Dynamics and Control, by Spong and Vidyasagar (Wiley, 1989), Robot Modeling and Control offers a thoroughly

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foundation for a solid education in robotics and motion planning. About the Author MARK W. SPONG has been researching and teaching robotics for over 35 years.

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Spong is the 2005 President of the IEEE Control Systems Society and past Editor-in-Chief of the IEEE Transactions on Control Systems Technology. Seth Hutchinson is currently a Professor at the University of Illinois in Urbana-Champaign, and a senior editor of the IEEE Transactions on Robotics and Automation.

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Main Robot Modeling and Control Robot Modeling and Control Mark W. Spong, Seth Hutchinson, M. Vidyasagar In a timely matter, arrived about a week after i ordered it and the book is in good conition.

A New Edition Featuring Case Studies and Examples of the Fundamentals of Robot Kinematics, Dynamics, and Control In the 2nd Edition of Robot Modeling and Control, students will cover the theoretical fundamentals and the latest technological advances in robot kinematics. With so much advancement in technology, from robotics to motion planning, society can implement more powerful and dynamic algorithms than ever before. This in-depth reference guide educates readers in four distinct parts; the first two serve as a guide to the fundamentals of robotics and motion control, while the last two dive more in-depth into control theory and nonlinear system analysis. With the new edition, readers gain access to new case studies and thoroughly researched information covering topics such as: ? Motion-planning, collision

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avoidance, trajectory optimization, and control of robots ? Popular topics within the robotics industry and how they apply to various technologies ? An expanded set of examples, simulations, problems, and case studies ? Open-ended suggestions for students to apply the knowledge to real-life situations A four-part reference essential for both undergraduate and graduate students, Robot Modeling and Control serves as a foundation for a solid education in robotics and motion planning.

This self-contained introduction to practical robot kinematics and dynamics includes a comprehensive treatment of robot control. It provides background material on terminology and linear transformations, followed by coverage of kinematics and inverse kinematics, dynamics, manipulator control, robust control, force control, use of feedback in nonlinear systems, and adaptive control. Each topic is supported by examples of specific applications. Derivations and proofs are included in many cases. The book includes many worked examples, examples illustrating all aspects of the theory, and problems.

"The coverage is unparalleled in both depth and breadth. No other text that I have seen offers a better complete overview of modern robotic manipulation and robot control." -- Bradley Bishop, United States Naval Academy Based on the highly successful classic, Robot Dynamics and Control, by Spong and Vidyasagar (Wiley, 1989), Robot Modeling and Control offers a thoroughly up-to-date, self-contained introduction to the field. The text presents basic and advanced material in a style that is at once readable and mathematically rigorous. Key Features * A step-by-step computational approach helps you derive and compute the forward kinematics, inverse

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kinematics, and Jacobians for the most common robot designs. * Detailed coverage of vision and visual servo control enables you to program robots to manipulate objects sensed by cameras. * An entire chapter on dynamics prepares you to compute the dynamics of the most common manipulator designs. * The most common motion planning and trajectory generation algorithms are presented in an elementary style. * The comprehensive treatment of motion and force control includes both basic and advanced methods. * The text's treatment of geometric nonlinear control is more readable than in more advanced texts. * Many worked examples and an extensive list of problems illustrate all aspects of the theory. About the authors Mark W. Spong is Donald Biggar Willett Professor of Engineering at the University of Illinois at Urbana-Champaign. Dr. Spong is the 2005 President of the IEEE Control Systems Society and past Editor-in-Chief of the IEEE Transactions on Control Systems Technology. Seth Hutchinson is currently a Professor at the University of Illinois in Urbana-Champaign, and a senior editor of the IEEE Transactions on Robotics and Automation. He has published extensively on the topics of robotics and computer vision. Mathukumalli Vidyasagar is currently Executive Vice President in charge of Advanced Technology at Tata Consultancy Services (TCS), India's largest IT firm. Dr. Vidyasagar was formerly the director of the Centre for Artificial Intelligence and Robotics (CAIR), under Government of India's Ministry of Defense.

A modern and unified treatment of the mechanics, planning, and control of robots, suitable for a first course in robotics.

Based on the successful Modelling and Control of Robot Manipulators by Sciavicco and Siciliano (Springer, 2000), Robotics provides the basic know-how on the foundations of

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robotics: modelling, planning and control. It has been expanded to include coverage of mobile robots, visual control and motion planning. A variety of problems is raised throughout, and the proper tools to find engineering-oriented solutions are introduced and explained. The text includes coverage of fundamental topics like kinematics, and trajectory planning and related technological aspects including actuators and sensors. To impart practical skill, examples and case studies are carefully worked out and interwoven through the text, with frequent resort to simulation. In addition, end-of-chapter exercises are proposed, and the book is accompanied by an electronic solutions manual containing the MATLAB® code for computer problems; this is available free of charge to those adopting this volume as a textbook for courses.

Written by two of Europe's leading robotics experts, this book provides the tools for a unified approach to the modelling of robotic manipulators, whatever their mechanical structure. No other publication covers the three fundamental issues of robotics: modelling, identification and control. It covers the development of various mathematical models required for the control and simulation of robots. · World class authority · Unique range of coverage not available in any other book · Provides a complete course on robotic control at an undergraduate and graduate level

A study of the latest research results in the theory of robot control, structured so as to echo the gradual development of robot control over the last fifteen years. In three major parts, the editors deal with the modelling and control of rigid and flexible robot manipulators and mobile robots. Most of the results on rigid robot manipulators in part I are now well established, while for flexible manipulators in part II, some

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