



# Principles of robot motion [theory, algorithms, and implementation /

Choset, Howie M.

MIT Press,  
c2005

Monografía

This text reflects the great advances in the field that have taken place in the last ten years, including sensor-based planning, probabilistic planning, localization and mapping, and motion planning for dynamic and nonholonomic systems. Its presentation makes the mathematical underpinnings of robot motion accessible to students of computer science and engineering, relating low-level implementation details to high-level algorithmic concepts

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**Título:** Principles of robot motion Recurso electrónico] theory, algorithms, and implementation Howie Choset ... [et al.].

**Editorial:** Cambridge, Mass. MIT Press c2005

**Descripción física:** 1 online resource (xix, 603 p. ill

**Tipo Audiovisual:** Robots Motion Robots Mouvements Robotik. swd Robots Motion. fast Electronic books

**Mención de serie:** Intelligent robotics and autonomous agents

**Nota general:** "A Bradford book."

**Bibliografía:** Includes bibliographical references (p. [565]-596) and index

**Contenido:** Cover -- Contents -- Foreword -- Preface -- Acknowledgments -- 1 Introduction -- 2 Bug Algorithms -- 3 Configuration Space -- 4 Potential Functions -- 5 Roadmaps -- 6 Cell Decompositions -- 7 Sampling-Based Algorithms -- 8 Kalman Filtering -- 9 Bayesian Methods -- 10 Robot Dynamics -- 11 Trajectory Planning -- 12 Nonholonomic and Underactuated Systems -- A Mathematical Notation -- B Basic Set Definitions -- C Topology and Metric Spaces -- D Curve Tracing -- E Representations of Orientation -- F Polyhedral Robots in Polyhedral Worlds -- G Analysis of Algorithms and Complexity Classes -- H Graph Representation and Basic Search -- I Statistics Primer -- J Linear Systems and Control -- Bibliography -- Index

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**ISBN:** 0262033275 (alk. paper) 026225591X electronic bk.) 9780262255912 electronic bk.) 9780262033275 (alk. paper)

**Autores:** Choset, Howie M.

**Enlace a formato físico adicional:** Print version:. Principles of robot motion. -- Cambridge, Mass. : MIT Press, c2005. (DLC) 2004044906

**Punto acceso adicional serie-Título:** Intelligent robotics and autonomous agents

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