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| 1. Record Nr. | UNINA9910260608803321 |
| Autore | Siegwart Roland |
| Titolo | Introduction to autonomous mobile robots |
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| ISBN | 0-262-29532-6 |
| Edizione | [2nd ed. /] |
| Descrizione fisica | 1 online resource (473 p.) |
| Collana | Intelligent robotics and autonomous agents series |
| Altri autori (Persone) | NourbakhshIlIah Reza <1970-> ScaramuzzaDavide |
| Disciplina | 629.8/932 |
| Soggetti | Mobile robots Autonomous robots Electronic books. |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Description based upon print version of record. |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Machine generated contents note: 1. Introduction -- 1.1. Introduction -- 1.2. An Overview of the Book -- 2. Locomotion -- 2.1. 4.7.3. Range histogram features -- 4.7.4. Extracting other geometric features -- 4.8. Problems -- 5. Mobile Robot Localization -- 5.1. Introduction -- 5.6.6. Classification of localization problems -- 5.6.7. Markov localization -- 5.6.8. Kalman filter localization -- 5.7. Other Examples of Localization Systems -- 5.7.1. Landmark-based navigation -- |
| Sommario/riassunto | Mobile robots range from the Mars Pathfinder mission's teleoperated Sojourner to the cleaning robots in the Paris Metro. This text offers students and other interested readers an introduction to the fundamentals of mobile robotics, spanning the mechanical, motor, sensory, perceptual, and cognitive layers the field comprises. The text focuses on mobility itself, offering an overview of the mechanisms that allow a mobile robot to move through a real world environment to perform its tasks, including locomotion, sensing, localization, and motion planning. It synthesizes material from such fields as kinematics, control theory, signal analysis, computer vision, information theory, artificial intelligence, and probability theory. The book presents the techniques and technology that enable mobility in a series of |

interacting modules. Each chapter treats a different aspect of mobility, as the book moves from low-level to high-level details. It covers all aspects of mobile robotics, including software and hardware design considerations, related technologies, and algorithmic techniques.] This second edition has been revised and updated throughout, with 130 pages of new material on such topics as locomotion, perception, localization, and planning and navigation. Problem sets have been added at the end of each chapter. Bringing together all aspects of mobile robotics into one volume, Introduction to Autonomous Mobile Robots can serve as a textbook or a working tool for beginning practitioners.
