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| Titolo | Robotic navigation and mapping with radar / / Martin Adams [and others] |
| Pubbl/distr/stampa | Boston ; , : Artech House, , ©2012<br>[Piscataqay, New Jersey] : , : IEEE Xplore, , [2012] |
| ISBN | 1-60807-483-8 |
| Descrizione fisica | 1 online resource (377 p.) |
| Altri autori (Persone) | AdamsMartin David |
| Disciplina | 629.045 |
| Soggetti | Mobile robots - Automatic control<br>Autonomous robots<br>Robots - Control systems<br>Radar in navigation |
| 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 | Introduction -- Fundamentals of radar and robotic navigation. A brief overview of radar fundamentals -- An introduction to detection theory -- Robotic navigation and mapping -- Radar modeling and scan integration. Predicting and simulating FMCW radar measurements -- Reducing detection errors and noise with multiple radar scans -- Robotic mapping with known vehicle location. Grid-based robotic mapping with detection likelihood filtering -- Feature-based robotic mapping with random finite sets -- Simultaneous localization and mapping. Radar-based SLAM with random finite sets -- x-band radar-based SLAM in an off-shore environment. |
| Sommario/riassunto | Focusing on autonomous robotic applications, this cutting-edge resource offers a practical treatment of short-range processing for reliable object detection at ground level. This book demonstrates probabilistic radar models and detection algorithms specifically for robotic vehicles on land and at sea, in coastal environments. It examines grid-based robotic mapping with radar, based on measurement likelihood estimation. Moreover, this book reformulates the feature-based robotic mapping and simultaneous localization and map building (SLAM) problems, so that detection, as well as spatial, |

uncertainty can be incorporated in a principled manner.