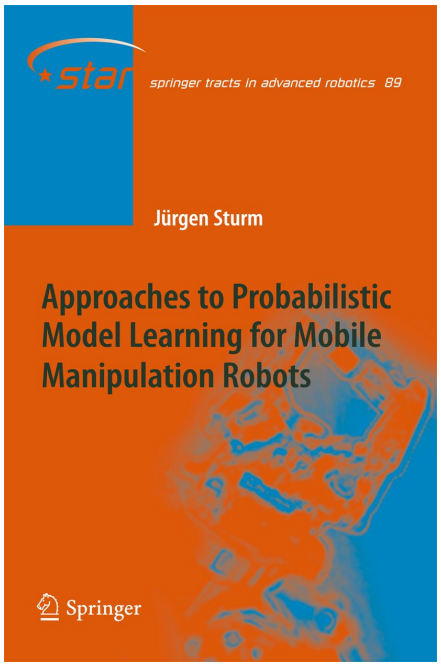


Springer

1st edition

2013, XXV, 204 p.

Printed book
Hardcover

Printed book
Hardcover
ISBN 978-3-642-37159-2
£ 129,99 | CHF 177,00 | 149,99 € | 164,99 € (A) | 160,49 € (D)
Available

Discount group
Science (SC)

Product category
Monograph

Series
Springer Tracts in Advanced Robotics

Other renditions
Softcover
ISBN 978-3-642-43714-4
Softcover
ISBN 978-3-642-37161-5

Engineering : Robotics and Automation

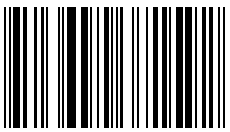
Sturm, Jürgen

Approaches to Probabilistic Model Learning for Mobile Manipulation Robots

- Presents recent research in Probabilistic Model Learning for Mobile Manipulation Robots
- Presents novel learning techniques that enable mobile manipulation robots, i. e., mobile platforms with one or more robotic manipulators, to autonomously adapt to new or changing situations
- Describes experiments, which have been conducted to analyze and validate the properties of the developed algorithms

Mobile manipulation robots are envisioned to provide many useful services both in domestic environments as well as in the industrial context. Examples include domestic service robots that implement large parts of the housework, and versatile industrial assistants that provide automation, transportation, inspection, and monitoring services. The challenge in these applications is that the robots have to function under changing, real-world conditions, be able to deal with considerable amounts of noise and uncertainty, and operate without the supervision of an expert. This book presents novel learning techniques that enable mobile manipulation robots, i.e., mobile platforms with one or more robotic manipulators, to autonomously adapt to new or changing situations. The approaches presented in this book cover the following topics: (1) learning the robot's kinematic structure and properties using actuation and visual feedback, (2) learning about articulated objects in the environment in which the robot is operating, (3) using tactile feedback to augment the visual perception, and (4) learning novel manipulation tasks from human demonstrations.

Order online at springer.com/booksellers
Springer Nature Customer Service Center GmbH
Customer Service
Tiergartenstrasse 15-17
69121 Heidelberg
Germany
T: +49 (0)6221 345-4301
row-booksellers@springernature.com



Prices and other details are subject to change without notice. All errors and omissions excepted. Americas: Tax will be added where applicable. Canadian residents please add PST, QST or GST. Please add $5.00 for shipping one book and $ 1.00 for each additional book. Outside the US and Canada add $ 10.00 for first book, $5.00 for each additional book. If an order cannot be fulfilled within 90 days, payment will be refunded upon request. Prices are payable in US currency or its equivalent.

ISBN 978-3-642-37159-2 / BIC: TJFM1 / SPRINGER NATURE: SCT19020