Predictive Autonomous Robot Navigation

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Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | POMDPs for robot navigation with integrated human motion prediction | A primary goal in robotics research is to provide means for mobile platforms to perform autonomously within their environment. Depending on the task at hand, autonomous performance can be defined as the execution by the robot, without human intervention, of certain navigational tasks. Commonly addressed navigation tasks include the localization, mapping, path planning and obstacle avoidance tasks. A probabilistic framework for the navigation tasks of localization, path planning and obstacle avoidance in dynamic environments is presented based on the Partially Observable Markov Decision Process (POMDP) model. POMDPs have the major shortcoming of their extreme computational complexity and hence they have been mainly used in robotics as high level path planners only. An hierarchical representation of POMDPs is introduced specifically designed for the autonomous robot navigation problem and termed as the Robot Navigation-Hierarchical POMDP (RNHPOMDP). Integration of human motion prediction into the navigation model is utilized with two kinds of prediction: short-term and long-term prediction. The book should be useful to students in Robotics utilizing POMDPs. | Format: Paperback | Language/Sprache: english | 136 pp.

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Reviews

This book is definitely worth acquiring. I have go through and so i am certain that i will likely to read through again again in the future. Its been printed in an exceptionally basic way in fact it is only after i finished reading this publication in which actually altered me, change the way in my opinion.
-- Andres Bashirian

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