



Introduction to Autonomous Manipulation: Case Study with an Underwater Robot, SAUVIM (Springer Tracts in Advanced Robotics)

By Junku Yuh

Springer. Paperback. Condition: New. 162 pages. Autonomous manipulation is a challenge in robotic technologies. It refers to the capability of a mobile robot system with one or more manipulators that performs intervention tasks requiring physical contacts in unstructured environments and without continuous human supervision. Achieving autonomous manipulation capability is a quantum leap in robotic technologies as it is currently beyond the state of the art in robotics. This book addresses issues with the complexity of the problems encountered in autonomous manipulation including representation and modeling of robotic structures, kinematic and dynamic robotic control, kinematic and algorithmic singularity avoidance, dynamic task priority, workspace optimization and environment perception. Further development in autonomous manipulation should be able to provide robust improvements of the solutions for all of the above issues. The book provides an extensive tract on sensory-based autonomous manipulation for intervention tasks in unstructured environments. After presenting the theoretical foundations for kinematic and dynamic modelling as well as task-priority based kinematic control of multi-body systems, the work is focused on one of the most advanced underwater vehicle-manipulator system, SAUVIM (Semi-Autonomous Underwater Vehicle for Intervention Missions). Solutions to the problem of target identification and localization are proposed, a number of significant case studies...



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Reviews

This publication may be really worth a go through, and a lot better than other. It really is written in simple terms and never difficult to understand. Once you begin to read the book, it is extremely difficult to leave it before concluding.

-- **Natalie Abbott**

This book will not be simple to get going on reading but extremely exciting to read through. Yes, it can be play, still an interesting and amazing literature. I am very easily could possibly get a delight of reading a written book.

-- **Rene Olson**