

1. Record Nr.	UNINA9910640379703321
Autore	Yildirim Alp
Titolo	Mobile robot automation in warehouses : a framework for decision making and integration // Alp Yildirim, Hendrik Reefke, and Emel Aktas
Pubbl/distr/stampa	Cham, Switzerland : , : Palgrave Macmillan, , [2023] ©2023
ISBN	3-031-12307-7
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (160 pages)
Collana	Palgrave Studies in Logistics and Supply Chain Management
Disciplina	657.838
Soggetti	Warehouses
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	1. Introduction -- 2. Methodology -- 3. Mobile Robot Systems and Their Evaluation -- 4. Mobile Robot Management: Focus Areas at the Strategic Level -- 5. Mobile Robot Management: Focus Areas at the Tactical Level -- 6. Mobile Robot Management: Focus Areas at the Operational Level -- 7. Managerial Decision Framework and Further Considerations -- 8. Research Agenda -- 9. Conclusion.
Sommario/riassunto	As the practical application of mobile robot systems is increasing, decision-makers are confronted with a plethora of decisions. However, research is lagging in providing the needed academic insights and managerial guidance. The lack of a structured decision framework tailored for mobile robot system applications in warehouses can lead to complications when choosing and implementing such automation systems. This book illustrates the applications of mobile robot systems in warehouse operations including an integrated decision framework for their selection and application. The authors first outline the characteristics of mobile robot systems which support warehouse managers in identifying, evaluating and choosing candidate systems through multiple criteria, then provide a managerial decision framework covering decisions at strategic, tactical and operational levels. This book puts special emphasis on change management and operational control of mobile robots using path planning and task allocation algorithms, as well as introducing focus areas that require

particular attention to aid the efficiency and practical application of these systems, such as facility layout planning, robot fleet sizing and human-robot interaction. It is essential reading for academics and students working on digital warehousing and logistics, as well as warehousing practitioners aiming to make informed decisions. Alp Yildirim is on the Leadership and Management PhD programme in Cranfield School of Management, UK. Previously, he worked in the logistics industry and co-founded an innovative company in additive manufacturing. His current research topic in supply chain management is mobile robot automation and throughput optimisation in warehouses. Hendrik Reefke is a Senior Lecturer in Supply Chain Management and Director of the Full-time MSc programmes in Logistics, Procurement and Supply Chain Management at Cranfield School of Management, UK. His research focuses on decision making within the areas of sustainable supply chain management, warehousing, supply chain configurations and performance measurement. Emel Aktas is Professor of Supply Chain Analytics at Cranfield School of Management, UK. Her research interests are logistics and transportation, supply chain decisions, mathematical modelling and optimisation, and she is currently working on minimising carbon emissions in maritime logistics with focus on the trade-off between service levels and fuel consumption.
