

Preface

Robot motion planning and its applications have attracted the attention of the robotic community along the last decades. This book is an attempt to address this wide topic with a multidisciplinary approach. While other publications focus on describing the theoretical basis of robot motion, this work pays special attention to explain the fundamentals through real applications. Thus, it represents a perfect combination for studying this topic along with other theoretical books.

Each chapter has been authored by an expert or a team of experts in a specific area spanning from the mechanics of machinery to control theory, informatics, mechatronics. Chapters have been divided into five parts. The first one aims to give a theoretical background. Then, Parts II–V discuss the main specific issues for a proper path planning of different types of robots such as robotic manipulators, wheeled robots, legged robots, cooperation and coordination of multiple aerial or underwater robots.

This book project can be foreseen as a reference for young professionals/researchers to overview the most significant aspects in the field of path planning. Given the wideness of the topic, this book can be considered as a first edition and, as Editors, we shall be pleased to consider additional contents/suggestions for a future edition.

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Background and Practical Approaches

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