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Autore	Richiedei Dario
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Sommario/riassunto	The optimization of motion and trajectory planning is an effective and usually costless approach to improving the performance of robots, mechatronic systems, automatic machines and multibody systems. Indeed, wise planning increases precision and machine productivity, while reducing vibrations, motion time, actuation effort and energy consumption. On the other hand, the availability of optimized methods for motion planning allows for a cheaper and lighter system construction. The issue of motion planning is also tightly linked with the synthesis of high-performance feedback and feedforward control schemes, which can either enhance the effectiveness of motion planning or compensate for its gaps. To collect and disseminate a meaningful collection of these applications, this book proposes 15 novel research studies that cover different sub-areas, in the framework of motion planning and control.