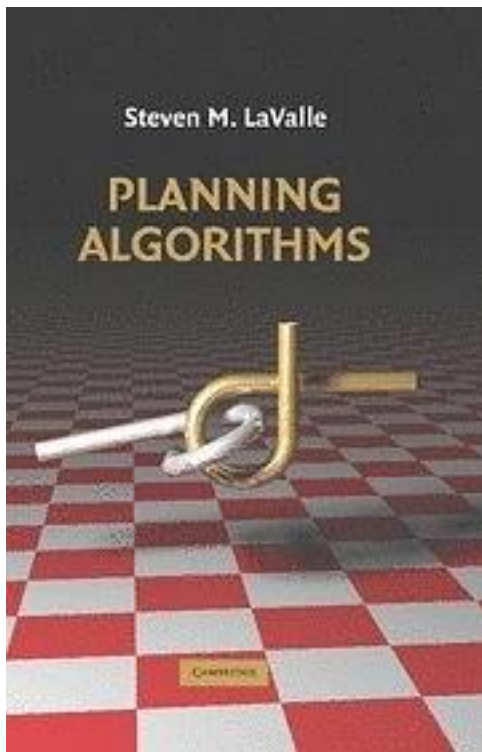


Planning Algorithms



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著者:LaValle, Steven M.

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This book presents a unified treatment of many different kinds of planning algorithms. The subject lies at the crossroads between robotics, control theory, artificial intelligence, algorithms, and computer graphics. The particular subjects covered include motion planning, discrete planning, planning under uncertainty, sensor-based planning, visibility, decision-theoretic planning, game theory, information spaces, reinforcement learning, nonlinear systems, trajectory planning, nonholonomic planning, and kinodynamic planning.

Planning algorithms are impacting technical disciplines and industries around the world, including robotics, computer-aided design, manufacturing, computer graphics, aerospace applications, drug design, and protein folding. This coherent and comprehensive book unifies material from several sources, including robotics, control theory, artificial intelligence, and algorithms. The treatment is centered on robot motion planning, but integrates material on planning in discrete spaces. A major part of the book is devoted to planning under uncertainty, including decision theory, Markov decision processes, and information spaces, which are the ‘configuration spaces’ of all sensor-based planning problems. The last part of the book delves into planning under differential constraints that arise when automating the motions of virtually any mechanical system. This text and reference is intended for students, engineers, and researchers in robotics, artificial intelligence, and control theory as well as computer graphics, algorithms, and computational biology.

作者介绍:

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这本书定位有点尴尬，作为tutorial来讲还不如直接看作者LaValle教授 (<http://msl.cs.uiuc.edu/~lavalle/index.html>) 某些survey paper，比如Motion planning: The essentials和Motion planning: Wild frontiers

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