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Nota di contenuto	Theory -- Introduction: Anticipation in Natural and Artificial Cognition -- The Anticipatory Approach: Definitions and Taxonomies -- Benefits of Anticipations in Cognitive Agents -- Models, Architectures, and Applications -- Anticipation in Attention -- Anticipatory, Goal-Directed Behavior -- Anticipation and Believability -- Anticipation and Emotions for Goal Directed Agents -- A Reinforcement-Learning Model of Top-Down Attention Based on a Potential-Action Map -- Anticipation by Analogy -- Anticipation in Coordination -- Endowing Artificial Systems with Anticipatory Capabilities: Success Cases.

Sommario/riassunto

This book proposes a unifying approach for the analysis and design of artificial cognitive systems: The Anticipatory Approach. In 11 coherent chapters, the authors of this State-of-the-Art Survey propose a foundational view of the importance of dealing with the future, of gaining some autonomy from current environmental data, and of endogenously generating sensorimotor and abstract representations. A meaningful taxonomy for anticipatory cognitive mechanisms is put forward, which distinguishes between the types of predictions and the different influences of these predictions on actual behavior and learning. Thus a new unifying perspective on cognitive systems is given. The Anticipatory Approach described in this book will not only aid in the analysis of cognitive systems, but will also serve as an inspiration and guideline for the progressively more advanced and competent design of large, but modular, artificial cognitive systems.
