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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Route Directions, Wayfinding, and Spatial Behavior -- Finding the Way Inside: Linking Architectural Design Analysis and Cognitive Processes -- Modelling Wayfinding in Public Transport: Network Space and Scene Space -- Isovists as a Means to Predict Spatial Experience and Behavior -- A Model for Context-Specific Route Directions -- Investigation of Preference Between the Least-Angle Strategy and the Initial Segment

Strategy for Route Selection in Unknown Environments -- Descriptions of Space – Prepositions and Reference -- Spatial Prepositions and Vague Quantifiers: Implementing the Functional Geometric Framework -- Reference Frame Conflict in Assigning Direction to Space -- Identifying Objects on the Basis of Spatial Contrast: An Empirical Study -- Cultural Differences of Spatial Descriptions in Tourist Guidebooks -- Mental Models, Diagrams, and Maps -- Reasoning About Consistency with Spatial Mental Models: Hidden and Obvious Indeterminacy in Spatial Descriptions -- Spatial Principles in Control of Focus in Reasoning with Mental Representations, Images, and Diagrams -- Perceptually Induced Distortions in Cognitive Maps -- Characterizing Diagrams Produced by Individuals and Dyads -- Sketch Map Analysis Using GIS Buffer Operation -- Imagined Perspective–Changing Within and Across Novel Environments -- Thinking Through Diagrams: Discovery in Game Playing -- Spatio-Temporal Representation and Reasoning -- The Finest of its Class: The Natural Point-Based Ternary Calculus for Qualitative Spatial Reasoning -- Exploiting Qualitative Spatial Neighborhoods in the Situation Calculus -- Branching Allen -- SNAPVis and SPANVis: Ontologies for Recognizing Variable Vista Spatial Environments -- Modelling Models of Robot Navigation Using Formal Spatial Ontology -- Specification of an Ontology for Route Graphs -- Robot Mapping and Piloting -- Autonomous Construction of Hierarchical Voronoi-Based Route Graph Representations -- Using 2D and 3D Landmarks to Solve the Correspondence Problem in Cognitive Robot Mapping -- Treemap: An O(log n) Algorithm for Simultaneous Localization and Mapping -- Towards Dialogue Based Shared Control of Navigating Robots -- Perception and Tracking of Dynamic Objects for Optimization of Avoidance Strategies in Autonomous Piloting of Vehicles.

Sommario/riassunto

This is the fourth volume in a series of books dedicated to basic research in spatial cognition. Spatial cognition is a field that investigates the connection between the physical spatial world and the mental world. Philosophers and researchers have p- osed various views concerning the relation between the physical and the mental worlds: Plato considered pure concepts of thought as separate from their physical manifestations while Aristotle considered the physical and the mental realms as two aspects of the same substance. Descartes, a dualist, discussed the interaction between body and soul through an interface organ and thus introduced a functional view that presented a challenge for the natural sciences and the humanities. In modern psychology, the relation between the physical and the cognitive space has been investigated using thorough experiments, and in artificial intelligence we have seen views as diverse as ‘problems can be solved on a representation of the world’ and ‘a representation of the world is not necessary. ’ Today’s spatial cognition work establishes a correspondence between the mental and the physical worlds by studying and exploiting their interaction; it investigates how mental space and spatial “reality” join together in understanding the world and in interacting with it. The physical and representational aspects are equally important in this work. Almost all topics of cognitive science manifest themselves in spatial cognition.