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Nota di contenuto

Active Inference and Robotics -- Contextual Qualitative Deterministic Models for Self-Learning Embodied Agents -- Dynamical Perception-Action Loop Formation with Developmental Embodiment for Hierarchical Active Inference -- Decision-making and Control -- Towards Metacognitive Robot Decision Making for Tool Selection -- Understanding Tool Discovery and Tool Innovation Using Active Inference -- Efficient Motor Learning Through Action-perception Cycles in Deep Kinematic Inference -- Active Inference and Psychology -- Towards Understanding Persons and their Personalities with Cybernetic Big 5 Theory and the Free Energy Principle and Active Inference (FEP-AI) Framework -- On Embedded Normativity - An Active Inference Account of Agency Beyond Flesh -- A Model of Agential Learning Using Active Inference -- From Theory to Implementation -- Designing Explainable Artificial Intelligence with Active Inference: A Framework for Transparent Introspection and Decision-making -- An Analytical Model of Active Inference in the Iterated Prisoner's Dilemma -- Toward Design of Synthetic Active Inference Agents by Mere Mortals -- Learning Representations for Active Inference -- Exploring Action-Centric Representations Through the Lens of Rate-Distortion Theory -- Integrating Cognitive Map Learning and Active Inference for Planning in Ambiguous Environments -- Relative Representations for Cognitive Graphs -- Theory of Learning and Inference -- Active Inference in Hebbian Learning Networks -- Learning One Abstract Bit at a Time Through Self-Invented Experiments Encoded as Neural Networks -- Probabilistic Majorization of Partially Observable Markov Decision Processes.

Sommario/riassunto

This volume constitutes the papers of the 4th International Workshop on Active Inference, IWA I 2023, held in Ghent, Belgium on September 2023. The 17 full papers included in this book were carefully reviewed and selected from 34 submissions. They were organized in topical sections as follows: active inference and robotics; decision-making and control; active inference and psychology; from theory to implementation; learning representations for active inference; and theory of learning and inference.