SMART BRAIN-DRIVEN DATA KNOWLEDGE GRAPH CONSTRUCTION METHOD AND SYSTEM FOR COMPLEX ECOLOGY

ABSTRACT

The present invention provides a smart brain-driven data knowledge graph construction method and system for complex ecology, and relates to the technical field of complex ecology. The method includes: collecting scenario data by a deep feature sensing network, and generating an initial graph structure; computing an entity similarity based on a graph feature fingerprint, screening related entity pairs and performing multi-hop path inference to generate an entity association confidence index; generating a multi-modal knowledge representation vector based on multi-modal feature extraction and a cross-modal attention mechanism; identifying influence features, computing transmission probability in combination with a problem evolution graph and causal inference, and performing comparative analysis on the transmission probability and the graph feature fingerprint to generate an optimization target; and generating an error correction strategy by an Adam optimizer, dynamically adjusting an inference depth by a dual-DQN network, and forming an optimization closed loop, thus constructing the data knowledge graph. According to the present invention, the accuracy and completeness of the knowledge graph can be effectively improved, the inference capability can be improved, thereby better adapting to knowledge discovery and application in complex ecological scenarios.

Drawing accompanying abstract: Fig. 1