SWARM INTELLIGENCE BASED FEDERATED LEARNING COLLABORATION METHOD AND SYSTEM FOR UNSTRUCTURED DATABASE

ABSTRACT

The present invention provides a swarm intelligence based federated learning collaboration method and system for an unstructured database, and relates to the technical field of structured data. The method includes: performing training by federated learning to obtain a query mode identification sub-model, a path programming sub-model and a resource allocation sub-model, and constructing a swarm intelligence collaboration network; parsing a query request of a user by the query mode identification sub-model, generating a candidate query path, fusing an ant colony algorithm and a particle swarm algorithm for optimizing, and generating a query execution scheme; accordingly performing resource scheduling by the resource allocation sub-model; and generating a performance optimization target for updating local model parameters of each node, and fusing the updated parameter by a security aggregation algorithm to guide the next round of query optimization. According to the present invention, the unstructured database query efficiency is improved, and the resource consumption is reduced.

Drawing accompanying abstract: Fig. 1