

Automatic construction of knowledge graph and its application in distribution equipment inspection

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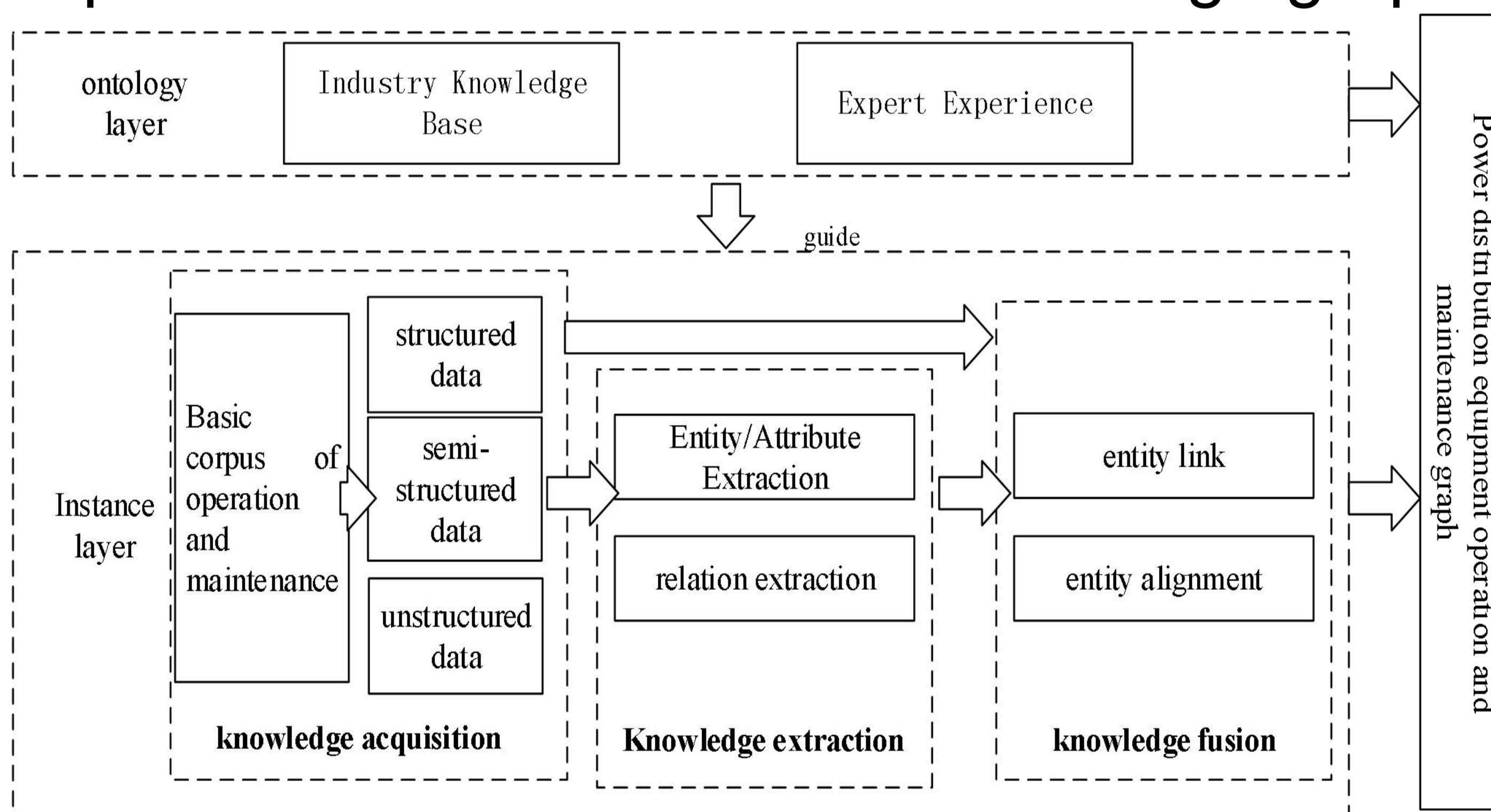
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Introduction of your work

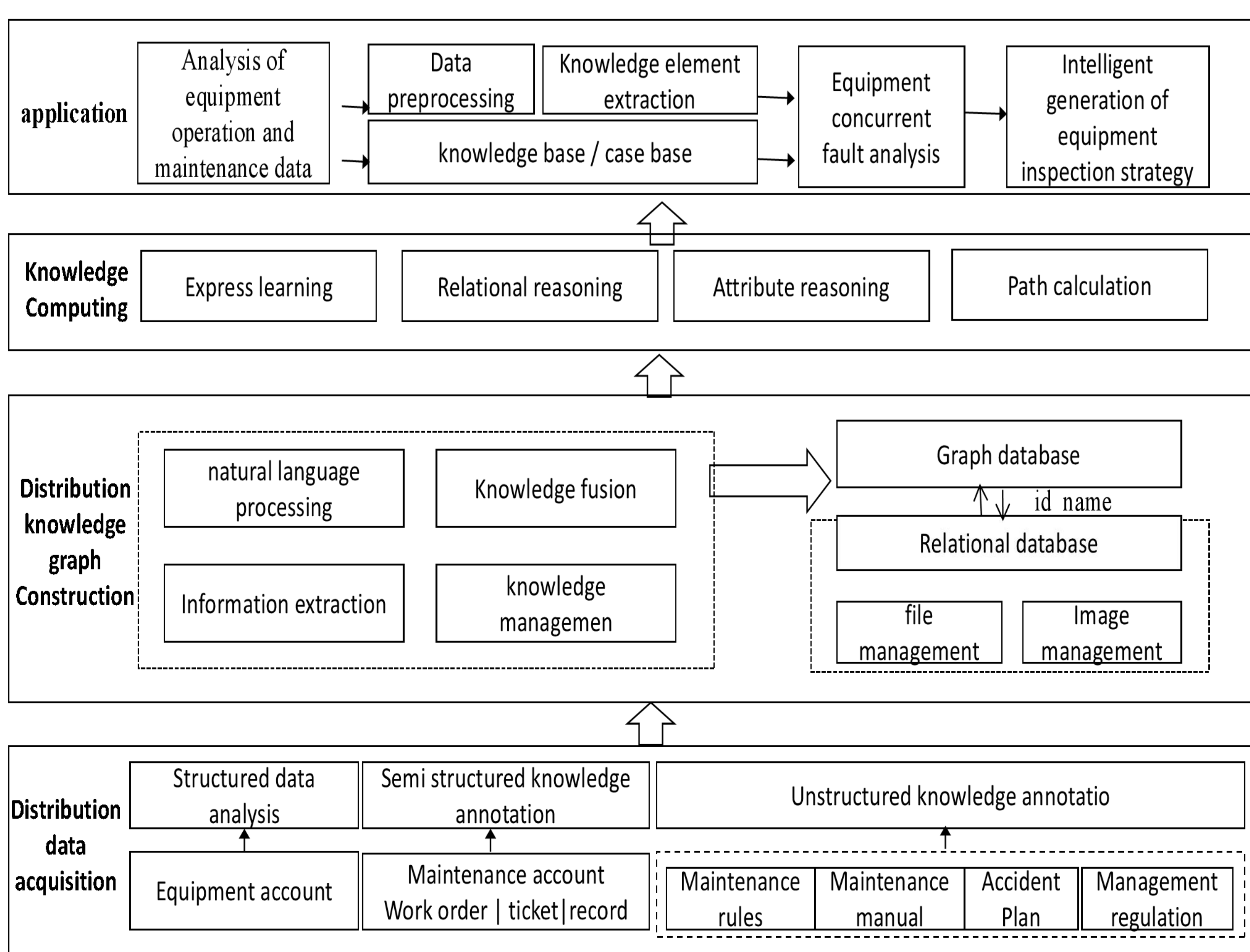
The research in this paper collects basic data in the power distribution field. Then it uses NLP technology to construct the knowledge graph about the operation and maintenance of power distribution equipment. Based on the reasoning and processing technology, this paper mines the concurrent faults of the power distribution equipment, and verifies the feasibility of the intelligent recommendation application providing the equipment maintenance strategies.

Methods of your work

Construction of distribution equipment operation and maintenance knowledge graph.

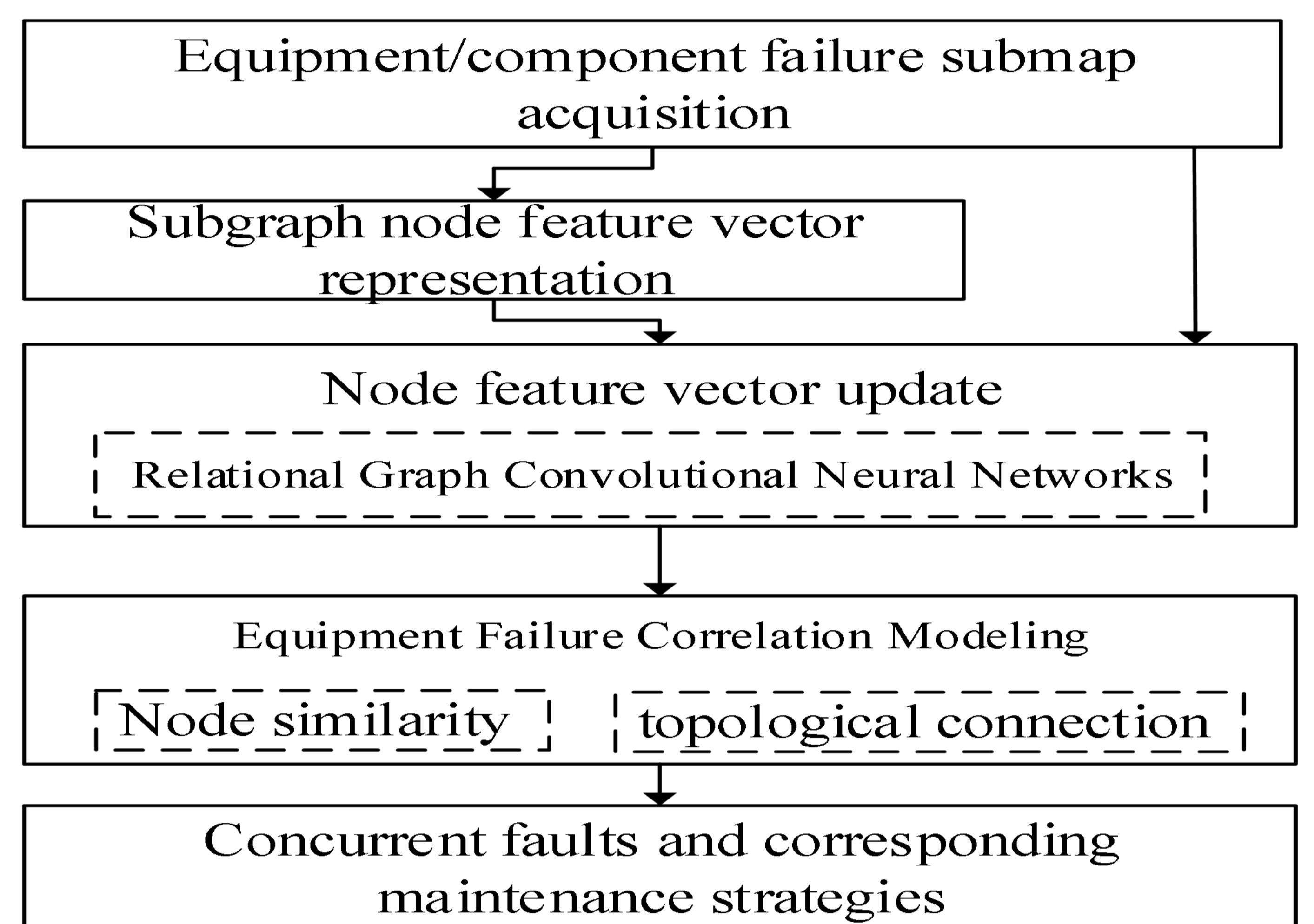


Application of power distribution equipment operation and maintenance knowledge graph in power business.



Results of your work

Maintenance strategies generation method



- Firstly, the fault subgraph containing key information is obtained with the equipment/component fault node as the core.
- Secondly, the entity and attribute nodes in the subgraph are represented by feature.
- Then, by using the relational graph convolutional neural network, the semantic representation of key information such as the location, time, and cause of the fault is fused to update the equipment/component fault representation.
- Finally, the fault correlation is modeled based on the node feature similarity and topological connection relationship, and then by computing the similarity between equipment or component nodes to search for concurrent faults, and using the path search algorithm to generate maintenance strategies.

Conclusions of your work

This paper proposes a method to construct a knowledge graph of power distribution operation and maintenance, studies the equipment concurrent fault mining technology based on the knowledge graph, and verifies the feasibility of intelligent recommendation application of power distribution maintenance strategies.