# 3. ABSTRACT

*Relationships in text data, such as novels and movie summaries, are often woven between different entities. One method for explaining entity relationships in a narrative context is through Knowledge Graphs, multi-relational graphs where entities act as nodes and relationships act as different types of edges. The knowledge in a Knowledge Graph is expressed as a series of three-component facts, called triples, which consist of (head entity, relation, tail entity) or (h, r, t). The Knowledge Graph method used is Embedding combined with Reasoning. Reasoning helps the embedding to decide on the correct triples, while embedding helps Reasoning to be more productive. The combination of Embedding and Reasoning is done iteratively, which can improve accuracy, provide better contextual understanding, and handle uncertainty and ambiguity. The research process involved creating a knowledge graph from novel data titled "The Adventure of the Speckled Band." The knowledge graph was then processed using the embedding method ComplEx and the reasoning method HermiT. The triple results from the embedding and reasoning processes were combined and checked to see if they met the stopping condition. The Knowledge Graph from the last iteration was evaluated using SPARQL queries, where the answers were compared to those from the LLM ChatGPT-4 then evaluated using an evaluation matrix. The study's results showed that the Knowledge Graph resulting from the iterative combination of Embedding and Reasoning had an accuracy of 0.733. This indicates that the SPARQL query answers have the strength to identify relevant answers.*

Keywords: Knowledge Graph, Embedding, Reasoning, Iterative, Exploring