

W1. “Figure 1 could be potentially improved for clarity and readability. Specifically, it would be nice to make the figure self-contained and self-explanatory by adding more illustrations and/or more descriptions in the figure caption.”

Figure 1

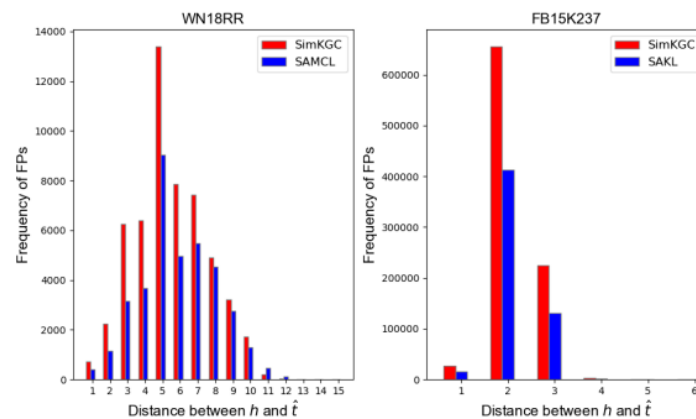


Figure 1: Number of false positives (FPs) based on the distance (i.e., length of shortest path) between a positive head and a false positive tail. The gap in this number between SimKGC and SAMCL is large, especially for small distances (e.g., 2-5 hops in WN18RR, 2-3 hops in FB15k-237).

Figure 2

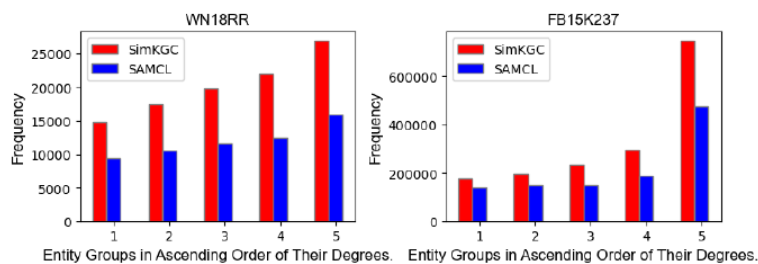


Figure 2: Frequency of the false positive triples proportional to their heads' degrees.

Figure 3.

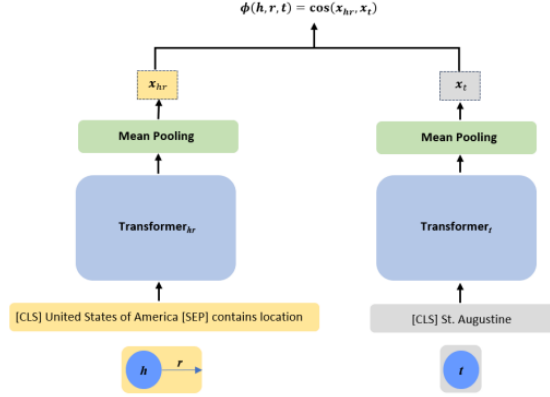


Figure 3: Bi-encoder architecture of SAMCL. Encoder $Transformer_{hr}$ takes the concatenation of a head's and a relation's name and description as input to produce embedding (\mathbf{x}_{hr}) . Encoder $Transformer_t$ takes a tail's name and description to obtain embedding (\mathbf{x}_t) . The score of a triple is calculated by the cosine similarity between (\mathbf{x}_{hr}) and (\mathbf{x}_t) .

Figure 4.

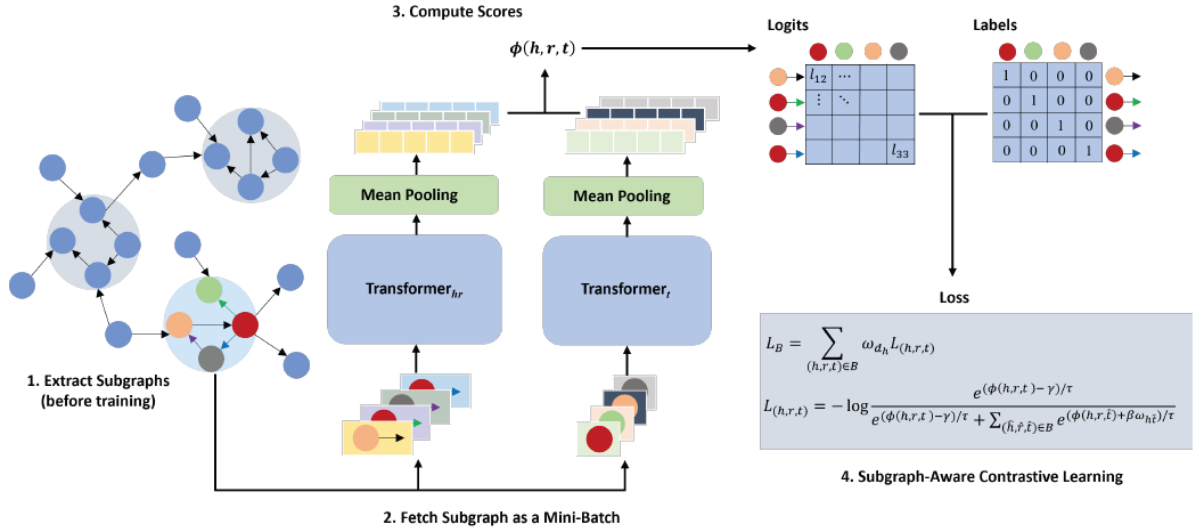


Figure 4: Overview of the proposed framework for subgraph sampling and training, which consists of: (i) extracting subgraphs from KG (which is performed in advance before training); (ii) fetching a mini-batch of triples in the subgraph with the least frequently visited triple; (iii) calculating a similarity between every (head, relation) pair and every tail in the mini-batch based on the embeddings produced by two encoders; (iv) contrastive learning over the mini-batch via infoNCE loss incorporated with two structure-aware factors.