Link Prediction in Knowledge Graphs (KGs) is a task of identifying missing links between entities. This task has been used in various KG embedding approaches to learn representations (embeddings) for different elements of KGs such as entities and relations in a low dimensional vector space. Most KGs like Dbpedia [1] contain textual descriptions of entities in various natural languages such as English, German, Italian, Spanish, Arabic, Chinese, and etc.

These descriptions of entities provide valuable information that may not be explicitly represented in the structured part of the KG. Based on this fact, few attempts have been made to combine the structured part of KGs with textual descriptions of entities to learn KGE models such as DKRL [2]. However, these methods use entity descriptions in only one language and ignore the fact that descriptions given in different languages may provide complementary information and thereby also additional semantics.

Therefore, in this thesis, the problem of effectively leveraging multilingual entity descriptions for the purpose of link prediction in KGs will be investigated.

This thesis will be supervised by Prof. Dr. Harald Sack and Genet Asefa Gesese, Information Service Engineering at Institute AIFB, KIT, in collaboration with FIZ Karlsruhe.


Which prerequisites should you have?

- Good programming skills in Python
- Interest in Deep Learning technologies
- Interest in Machine Learning approaches
- Interest in Natural Language Processing

Contact person:
Genet Asefa Gesese
genet-asefa.gesese@partner.kit.edu
genet-asefa.gesese@fiz-karlsruhe.de