Thesis Defense

Computer Science Master's Program

"KGScore-Open: Leveraging Knowledge Graph Semantics for Open-QA Evaluation"

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Abstract:

Automated evaluation in Question Answering (QA) has proven to be difficult, and is usually done with ground truth answers present. We propose KGScore-Open, which uses an end-to-end evaluation system leveraging DBPedia, a Knowledge Graph (KG) derived from Wikipedia, to score question-answer pairs in Open Domain Question Answering (Open-QA). The system maps entities from questions and answers to DBPedia nodes, constructs a Knowledge Graph based on these entities, and calculates a relatedness score. Our system is validated on multiple datasets, achieving up to 83% accuracy in differentiating relevant from irrelevant answers in the Natural Questions dataset, 55% accuracy in classifying correct versus incorrect answers (hallucinations) in the TruthfulQA and HaluEval datasets, and 54% accuracy on the QA-Eval task using the EVOUNA dataset. The contributions of this work include a novel confidence-scoring system for Open-QA without the need for ground truth answers, demonstrated efficacy across various tasks, and an extendable framework applicable to different KGs for evaluating QA systems of other domains.

Date: Thursday, June 13th, 2024
Time: 10:00 AM – 12:00 PM
Location: 14-232b
Zoom: https://calpoly.zoom.us/j/85627682102
Committee: Dr. Stanchev, Dr. Khosmood, and Dr. Ventura