Abstract

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Neural networks
for reading comprehension applied to
non-factoid question answering

Recent advances on Machine Reading Comprehension of Text have shown a potential of artificial neural network based models for solving the task, but at the same time comparatively high performance is bound with availability of high-quality large-scale datasets. Major part of solutions proposed by the community are complex neural architectures.

An example of state-of-the-art approach on traditional datasets, such as TREC-QA, WikiQA, is Support Vector Machine (SVM) model employing Partial Tree Kernels (PTKs). Though neural and traditional (SVM+PTK) approaches can be compared in the lower-scale setting, it is important to understand the performance of Tree Kernel (TK) methods in a large-scale setting, as TK is a reliable representation of syntactic information, in contrast to neural architectures, which couldn't employ complete syntactic parsing yet.

Though there were some attempts to set baselines with a simpler and more transparent approaches, it seems that there is a gap in the field of having no attempt to apply SVM+TK model in the new large-scale setting.

The thesis gives an overview of novel neural network architectures developed on large-scale datasets and reports the results of our attempts to apply SVM+TK model to large-scale Stanford Question Answering Dataset (SQuAD). We applied SVM+TK, but faced some difficulties mainly due to efficiency problems. We also used different relaxation approaches in order to make TK models applicable and to set the upper bound.