Exploring Event Extraction as Set Prediction with Non-autoregressive Transformer

Shengqiang Zhang

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- **Supervisor**: Shengqiang Zhang
- **Examiner**: Prof. Hinrich Schütze
- **Open to**: MSc.
- **Prerequisites**: Good programming background (Python, PyTorch/TensorFlow, etc), basic knowledge and experience of natural language processing (NLP) and deep learning.
- **Introduction**:

  A set is a collection of different things in which the order of the elements is irrelevant. Many tasks in computer vision (e.g., object detection [1, 5]) and NLP (e.g., named entity recognition [7], joint entity and relation extraction [4]) can be considered as set prediction tasks. For example, the outputs of the named entity recognition task are a set of named entities, and there is no prediction order dependency between each entity. Lots of existing works, ignoring this order-agnostic attribute and using autoregressive generation models instead, can achieve quite good performance on some of these tasks. However, this study tries to highlight the inherent orderagnostic attribute in these tasks and consider them as the set prediction problem.

  This study aims to explore applying set prediction to event extraction, which aims to identify structured events, including event triggers and their corresponding arguments from unstructured text [3]. Event extraction is a relatively difficult task in NLP that requires deep semantic understanding ability. Although lots of efforts have been made to solve this task, little work has tried to explore this task as a set prediction problem. This study will explore the event extraction task with experience in the set prediction field on several public datasets, following the convention of using the non-autoregressive architecture [2] of Transformer [6]. We hope this study will contribute to the community with a baseline of applying NAR set prediction models to the event extraction task, as well as a comparison between the NAR model and existing autoregressive models and potential improvements over this task.

References

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