Linguistic variability and communicative effectiveness: Challenges in neural language generation

Simeon Schüz (Universität Bielefeld)

Sina Zarrieß (Universität Bielefeld)

When speakers converse, their utterances are remarkably diverse and, at the same time, remarkably precise and effective. For instance, in a widely used corpus of human descriptions of images showing common objects, Devlin et al. (2015) find that 99% of the image captions are unique. Other work that has collected such descriptions in interactive, game-based settings found that speakers often only need a few words to unambiguously refer to objects or generally make themselves understood in a rich, communicative context.

Handling the variability of utterances that speakers are able to use with such a high degree of effectiveness is still a central challenge in conversational systems that generate natural language. In this talk, I will discuss recent attempts in NLG (natural language generation) at making systems more diverse or more effective, showing that these objectives are often at odds. I will discuss some of our recent work on decoding methods for neural NLG that aims at overcoming trade-offs between quality, diversity and communicative effectiveness.

Reference:

Jacob Devlin, Hao Cheng, Hao Fang, Saurabh Gupta, Li Deng, Xiaodong He, Geoffrey Zweig, Margaret Mitchell. 2015. Language models for image captioning: The quirks and what works. In: *Proceedings of the 53rd Annual Meeting of the Association for Computational Linguistics and the 7th International Joint Conference on Natural Language Processing (Volume 2: Short Papers)*, Beijing, China, pp. 100–105. ACL