

Neural Machine Translation

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Neural Machine Translation: Recent advances and remaining challenges

Machine translation is the process of automatically translating text from one language into another. Research on designing and improving machine translation algorithms has been active for decades, but recent advances in machine learning with deep neural networks have led to revolutionary improvements in translation quality. Compared to the best technology of only a few years ago, these “neural machine translation” systems produce amazingly fluent and correct translations. In this talk, I will give a broad overview of how these systems work and address some of the remaining challenges and open questions. I will also speak about how machine translation is used at Amazon to help our customers cross language boundaries.

Hagen Fuerstenau is a research manager at Amazon, leading the machine translation team in Berlin. Before joining Amazon, his research focus was on computational semantics, learning representations of the meanings of words and sentences from data. His PhD work at Saarland University and University of Edinburgh was on semi-supervised methods for semantic role labeling, trying to automatically identify events and their participants from text data and some human annotations. During a postdoc stay at Columbia University, he then investigated if such information can also be extracted from text alone in an unsupervised setting. He later became interested in machine translation as a challenging application, since translating well is not possible without capturing the meaning of texts.

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