

Beyond Neural MT

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A lot of hype and excitement has surrounded the latest advances in Neural Machine Translation (NMT) and generally with some justification: output is more fluent and closer to normal human output. Nevertheless some of the claims need to be qualified and practical implementation of NMT is not without difficulty: typically double the training material is required when compared to Statistical Machine Translation (SMT) and training a new engine can take weeks not days. Although NMT can produce much more fluent output than SMT, it can have limited impact concerning real world localization tasks. Extensive tests have proven that in the end there is no great improvement in post-editing throughput and NMT is no panacea for omission or mistranslation. With NMT it is also impossible to ‘tune’ the output as can be done with SMT: you have no knowledge of how the NMT engine has made its decisions.

Most practical translation projects do not have anywhere near enough training data and do not have the luxury of waiting weeks for an engine to be trained, even if there was sufficient data available. If the training has been done on unrelated material or material that is not directly relevant to the customer’s terminology then misleading results can be produced: due to its improved fluency, NMT can make identifying mistakes more difficult. NMT quality can also drop with the length of sentences and translating from a morphologically rich language to one that is morphologically impoverished can in fact produce worse results than SMT.

This presentation will look at the practical limitations of NMT and at what is on the horizon beyond NMT that offers answers to many of NMT’s limitations.

The absolute goal for SMT and NMT is to improve translator productivity. In the end both systems effectively produce computer generated fuzzy matches (CGFM) which will always have to be reviewed and post-edited.

Looking beyond NMT a much more effective, practical and completely automated way of boosting translator productivity is for the system to learn from the translator as she translates. Whereas NMT is a very good way of generating fluent ‘gisting’ over a wide range of materials, adaptive translation (AT) looks for patterns in text for a customer/project as well as using the customer’s terminology, backed up by big data bilingual dictionaries such as BabelNet and part of speech (POS) analyzers. Typically documents contain much redundancy and repetition in their text content and this fact can be exploited by AT to considerably improve translator productivity.

This presentation looks at the elements required to generate a highly efficient AT system that works with the translator, rather than forcing MT output on her, using her input to increase productivity and produce high quality and consistent translated output.