EUROPEAN ASSOCIATION FOR MACHINE TRANSLATION

EAMT2018

Proceedings of the

21st Annual Conference of the European Association for Machine Translation

28–30 May 2018

Universitat d'Alacant

Alacant, Spain

Edited by

Juan Antonio Pérez-Ortiz

Felipe Sánchez-Martínez

Miquel Esplà-Gomis

Maja Popović

Celia Rico

André Martins

Joachim Van den Bogaert

Mikel L. Forcada

Organised by

Universitat d'Alacant

Universidad de Alicante

transducens

research group

ISBN: 978-84-09-01901-4

The ModernMT Project

Nicola Bertoldi **Davide Caroselli** **Marcello Federico**

MMT Srl - Trento, Italy
www.modernmt.eu

Abstract

This short presentation introduces ModernMT: an open-source project [1] that integrates real-time adaptive neural machine translation into a single easy-to-use product.

1 Neural Machine Translation

Neural machine translation (MT) technology has been widely adopted by the translation industry, to produce ready-to-use drafts or high quality translations via post-editing. Deployed engines are either generic, such as Google Translate, or customized, like the MT@EC engine, which is particularly suited to the EU policy documents. Generic MT works well on average, but it can be bad at handling domain specific terminology or style. On the other hand, custom MT can definitely be more accurate but does not scale. Actually, for the translation industry the granularity of a domain can be very fine – i.e. specific customers might use terminology in their own original way – thus, ending up with thousands of domains. Customization becomes quickly unfeasible, for both computational and infrastructure costs. This is where ModernMT comes in!

2 Adaptive NeuralMT

ModernMT is a new open-source MT software that consolidates the current state-of-the-art MT technology into a single and easy-to-use product. ModernMT adapts to the context in real-time and is capable of learning from and evolving through interaction with users, with the final aim of increasing MT-output utility for the translator in a real professional environment. This is achieved by augmenting a generic neural MT system with an internal dynamic memory, storing all available user translation memories (TMs). This process is completely transparent when users work with a CAT tool, like MateCat (Federico et al., 2014). The ModernMT memory is kept in sync with the user TMs. When ModernMT receives a translation query, it quickly analyses its context, recalls from its memory the most related translation examples, and instantly adapts its neural network to the query.

3 Performance

Our adaptation approach (Farajian et al., 2017) has proven to deliver the translation quality of customized machine translation at the maintenance costs of a generic system. Thanks to careful optimization, the whole adaptation process, which is run for every sentence, just takes a fraction of second. Further, experiments have also shown that our context-based and memory-based adaptation method impacts positively on the translation of terminology.

4 Software as a Service

ModernMT is also provided as a SaaS solution for enterprises. Benefits include cutting-edge innovations, baseline models trained on billions of words of premium data, support for nine language pairs (and more to come). Finally, professional translators can instead benefit from all the advantages of ModernMT in MateCat[2], a free CAT tool that is perfectly integrated with our service.

References

Federico M. et al. 2014. *The MATECAT Tool*, Proc. COLING, Dublin, Ireland.

Farajian M. A. et al. 2017. *Multi-domain Neural Machine Translation through Unsupervised Adaptation*, Proc. WMT, Copenhagen, Denmark.

[1] https://github.com/ModernMT/MMT.

[2] www.matecat.com

Pérez-Ortiz, Sánchez-Martínez, Esplà-Gomis, Popović, Rico, Martins, Van den Bogaert, Forcada (eds.)
Proceedings of the 21st Annual Conference of the European Association for Machine Translation, p. 345
Alacant, Spain, May 2018.