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Proceedings of the Workshop on Reordering for Statistical Machine Translation
Karthik Visweswariah, Ananthakrishnan Ramanathan and Mitesh M. Khapra (eds.)
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Preface

Statistical Machine Translation (SMT) is currently a very active area of research. Top NLP conferences typically include many papers on SMT, and the past decade has also seen many workshops on this topic (e.g., WMT, SSST). Results reported in papers on SMT include the influence of various components and processes, one of the most important of these being reordering (except for structurally similar language pairs like English-French). Traditional phrase-based SMT systems, which have been the state-of-the-art in the previous decade, do not handle reordering in a satisfactory manner, and various new and more sophisticated methods for reordering have been introduced in the past couple of years. However, unlike most other potential components of MT systems, such as transliteration, WSD, and anaphora resolution, reordering has not had a dedicated forum for its evaluation. The proposed workshop will be a platform to bring together different MT systems and compare how they tackle this crucial subtask.

A shared task on "learning reordering from word-alignments" will be at the heart of this workshop. Parser-based reordering has been a popular method, but many languages do not have parsers (e.g., no Indian language has a publicly available parser), and using alignments to learn parsers (and thereafter reordering) or to learn reordering models directly is an important new idea in MT. The task is to develop a system for reordering a source sentence to best match the order of the corresponding target sentence. For example, the English (SVO language) sentence "Ram drinks water" is translated into Hindi (SOV language) as "Ram paanii piitaa hai (Ram water drinks)". Thus, the correct reordering of this English sentence which matches the target (Hindi) order is 'Ram water drinks'.

We released high-quality word-alignments (annotated by hand) between English and 3 languages (Farsi, Italian and Urdu), and described one or two baseline techniques for reordering based on publicly available tools (such as GIZA++, Moses). We also made available part-of-speech tags for this data to enable participants to experiment with these additional features easily. The participants have to reorder the English sentences to match the order of the target language. Participants can choose either to come up with their own reordering models or tweak the baseline system to improve performance.

Workshop Chairs

Mitesh M. Khapra, IBM Research India
Ananthakrishnan Ramanathan, IBM Research India
Karthik Visweswariah, IBM Research India
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Pushpak Bhattacharyya (IIT Bombay)
Philipp Koehn (University of Edinburgh)
Phil Blunsom (Oxford University)
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Workshop on Reordering for Statistical Machine Translation
Program

Sunday, 9 December 2012

14:30–15:30 Invited talk:
A survey of reordering for MT with a focus on pre-ordering
Karthik Visweswariah, IBM Research India

15:30–15:40 Introduction to the shared task
Whitepaper for Shared Task on Learning Reordering from Word Alignments at RSMT 2012
Report of the Shared Task on Learning Reordering from Word Alignments at RSMT 2012

15:40–16:10 A Tagging-style Reordering Model for Phrase-based SMT
Minwei Feng and Hermann Ney

16:10–16:30 Building a reordering system using tree-to-string hierarchical model
Jacob Dlougach and Irina Galluskaya

16:30–17:00 Tea break

17:00–17:20 Learning Improved Reordering Models for Urdu, Farsi and Italian using SMT
Rohit Gupta, Raj Nath Patel and Ritesh Shah

17:20–17:40 Partially modelling word reordering as a sequence labelling problem
Anoop Kunchukuttan and Pushpak Bhattacharyya

17:40–18:00 Concluding remarks by workshop chairs