

EMNLP 2015

**Tenth Workshop on
Statistical Machine Translation**

Proceedings of the Workshop

17-18 September 2015

Lisbon, Portugal

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Preface

The EMNLP 2015 Workshop on Statistical Machine Translation (WMT 2015) took place on Thursday and Friday, September 17-18, 2015 in Lisbon, Portugal, immediately preceding the Conference on Empirical Methods in Natural Language Processing (EMNLP).

This was the tenth time this workshop has been held. The first time it was held at HLT-NAACL 2006 in New York City, USA. In the following years the Workshop on Statistical Machine Translation was held at ACL 2007 in Prague, Czech Republic, ACL 2008, Columbus, Ohio, USA, EACL 2009 in Athens, Greece, ACL 2010 in Uppsala, Sweden, EMNLP 2011 in Edinburgh, Scotland, NAACL 2012 in Montreal, Canada, ACL 2013 in Sofia, Bulgaria, and ACL 2014 in Baltimore, Maryland, USA.

The focus of our workshop was to use parallel corpora for machine translation. Recent experimentation has shown that the performance of SMT systems varies greatly with the source language. In this workshop we encouraged researchers to investigate ways to improve the performance of SMT systems for diverse languages, including morphologically more complex languages, languages with partial free word order, and low-resource languages.

Prior to the workshop, in addition to soliciting relevant papers for review and possible presentation, we conducted five shared tasks: a general translation task, an automatic post-editing task, a quality estimation task, a metrics task, and a tuning task. The automatic post-editing task was introduced this year as a pilot to examine the capabilities of automatic methods for correcting errors produced by machine translation systems. This year's tuning task is a follow up of the WMT 2011 invitation-only tunable metrics task to assess a system's ability to optimize the parameters of a given hierarchical MT system. The results of all shared tasks were announced at the workshop, and these proceedings also include an overview paper for the shared tasks that summarizes the results, as well as provides information about the data used and any procedures that were followed in conducting or scoring the task. In addition, there are short papers from each participating team that describe their underlying system in greater detail.

Like in previous years, we have received a far larger number of submission than we could accept for presentation. This year we have received 28 full paper submissions and 47 shared task submissions. In total WMT 2015 featured 11 full paper oral presentations and 46 shared task poster presentations.

The invited talk was given by Jacob Devlin (Microsoft Research), entitled "A Practical Guide to Real-Time Neural Translation".

We would like to thank the members of the Program Committee for their timely reviews. We also would like to thank the participants of the shared task and all the other volunteers who helped with the evaluations.

Ondřej Bojar, Rajan Chatterjee, Christian Federmann, Barry Haddow, Chris Hokamp, Matthias Huck, Varvara Logacheva, Pavel Pecina, Philipp Koehn, Christof Monz, Matteo Negri, Matt Post, Carolina Scarton, Lucia Specia, and Marco Turchi.

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Yulia Tsvetkov (Carnegie Mellon University)
Marco Turchi (Fondazione Bruno Kessler)
Ferhan Ture (BBN Technologies)
Masao Utiyama (NICT)
Ashish Vaswani (University of Southern California Information Sciences Institute)

David Vilar (Nuance)
Martin Volk (University of Zurich)
Aurelien Waite (University of Cambridge)
Taro Watanabe (NICT)
Marion Weller (Universität Stuttgart)
Philip Williams (University of Edinburgh)
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Tiejun Zhao (Harbin Institute of Technology)
Yinggong Zhao (State Key Laboratory for Novel Software Technology at Nanjing University)

Invited Speaker:

Jacob Devlin (Microsoft Research)

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Conference Program

Thursday, September 17, 2015

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09:05–09:50 **Session 1: Shared Tasks**

09:05–09:50 *Findings of the 2015 Workshop on Statistical Machine Translation*

Ondřej Bojar, Rajen Chatterjee, Christian Federmann, Barry Haddow, Matthias Huck, Chris Hokamp, Philipp Koehn, Varvara Logacheva, Christof Monz, Matteo Negri, Matt Post, Carolina Scarton, Lucia Specia and Marco Turchi

09:50–10:30 **Session 2: Data Selection**

09:50–10:10 *Statistical Machine Translation with Automatic Identification of Translationese*

Naama Twitto, Noam Ordan and Shuly Wintner

10:10–10:30 *Data Selection With Fewer Words*

Amittai Axelrod, Philip Resnik, Xiaodong He and Mari Ostendorf

10:30–11:00 *Coffee Break*

11:00–12:30 **Session 3A: Poster Session - Shared Task: Translation**

DFKI's experimental hybrid MT system for WMT 2015

Eleftherios Avramidis, Maja Popović and Aljoscha Burchardt

ParFDA for Fast Deployment of Accurate Statistical Machine Translation Systems, Benchmarks, and Statistics

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Thursday, September 17, 2015 (continued)

New Language Pairs in TectoMT

Ondřej Dušek, Luís Gomes, Michal Novák, Martin Popel and Rudolf Rosa

Tuning Phrase-Based Segmented Translation for a Morphologically Complex Target Language

Stig-Arne Grönroos, Sami Virpioja and Mikko Kurimo

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LIMSI@WMT' 15 : Translation Task

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11:00–12:30 Session 3B: Poster Session - Shared Task: Automatic Post-Editing

The FBK Participation in the WMT15 Automatic Post-editing Shared Task

Rajen Chatterjee, Marco Turchi and Matteo Negri

USAAR-SAPE: An English–Spanish Statistical Automatic Post-Editing System

Santanu Pal, Mihaela Vela, Sudip Kumar Naskar and Josef van Genabith

Why Predicting Post-Editition is so Hard? Failure Analysis of LIMSI Submission to the APE Shared Task

Guillaume Wisniewski, Nicolas Pécheux and François Yvon

12:30–14:00 Lunch

14:00–15:30 Session 4: Invited Talk

14:00–15:30 *A Practical Guide to Real-Time Neural Translation*

Jacob Devlin

15:30–16:00 Coffee Break

Thursday, September 17, 2015 (continued)

16:00–17:00 Session 5: Syntax-Based Translation and Rescoring

16:00–16:20 *Hierarchical Machine Translation With Discontinuous Phrases*

Miriam Kaeshammer

16:20–16:40 *Discontinuous Statistical Machine Translation with Target-Side Dependency Syntax*

Nina Seemann and Andreas Maletti

16:40–17:00 *ListNet-based MT Rescoring*

Jan Niehues, Quoc-Khanh DO, Alexandre Allauzen and Alex Waibel

Friday, September 18, 2015

09:00–09:50 Session 6: Shared Tasks

09:00–09:20 *Overview of the Quality Estimation Task*

Multiple Speakers

Results of the WMT15 Metrics Shared Task

Miloš Stanojević, Amir Kamran, Philipp Koehn and Ondřej Bojar

Results of the WMT15 Tuning Shared Task

Miloš Stanojević, Amir Kamran and Ondřej Bojar

Friday, September 18, 2015 (continued)

09:50–10:30 Session 7: Translation Modeling

09:50–10:10 *Extended Translation Models in Phrase-based Decoding*
Andreas Guta, Joern Wuebker, Miguel Graca, Yunsu Kim and Hermann Ney

10:10–10:30 *Investigations on Phrase-based Decoding with Recurrent Neural Network Language and Translation Models*
Tamer Alkhouli, Felix Rietig and Hermann Ney

10:30–11:00 Coffee Break

11:00–12:30 Session 8A: Poster Session - Shared Task: Quality Estimation

Referential Translation Machines for Predicting Translation Quality and Related Statistics
Ergun Bicici, Qun Liu and Andy Way

UAlacant word-level machine translation quality estimation system at WMT 2015
Miquel Esplà-Gomis, Felipe Sánchez-Martínez and Mikel Forcada

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SHEF-NN: Translation Quality Estimation with Neural Networks
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Strategy-Based Technology for Estimating MT Quality
Liugang Shang, Dongfeng Cai and Duo Ji

Friday, September 18, 2015 (continued)

UGENT-LT3 SCATE System for Machine Translation Quality Estimation

Arda Tezcan, Veronique Hoste, Bart Desmet and Lieve Macken

11:00–12:30 Session 8B: Poster Session - Shared Task: Metrics

Multi-level Evaluation for Machine Translation

Boxing Chen, Hongyu Guo and Roland Kuhn

VERTa: a Linguistically-motivated Metric at the WMT15 Metrics Task

Elisabet Comelles and Jordi Atserias

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Machine Translation Evaluation using Recurrent Neural Networks

Rohit Gupta, Constantin Orasan and Josef van Genabith

Alignment-based sense selection in METEOR and the RATATOUILLE recipe

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chrF: character n-gram F-score for automatic MT evaluation

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LeBLEU: N-gram-based Translation Evaluation Score for Morphologically Complex Languages

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CASICT-DCU Participation in WMT2015 Metrics Task

Hui Yu, Qingsong Ma, Xiaofeng Wu and Qun Liu

Friday, September 18, 2015 (continued)

11:00–12:30 Session 8C: Poster Session - Shared Task: Tuning

Drem: The AFRL Submission to the WMT15 Tuning Task

Grant Erdmann and Jeremy Gwinnup

MT Tuning on RED: A Dependency-Based Evaluation Metric

Liangyou Li, Hui Yu and Qun Liu

Improving evaluation and optimization of MT systems against MEANT

Chi-kiu Lo, Philipp Dowling and Dekai Wu

12:30–14:00 Lunch

14:00–15:20 Session 9: Evaluation and System Combination

An Investigation of Machine Translation Evaluation Metrics in Cross-lingual Question Answering

Kyoshiro Sugiyama, Masahiro Mizukami, Graham Neubig, Koichiro Yoshino, Sakriani Sakti, Tomoki Toda and Satoshi Nakamura

Dependency Analysis of Scrambled References for Better Evaluation of Japanese Translation

Hideki Isozaki and Natsume Kouchi

How do Humans Evaluate Machine Translation

Francisco Guzmán, Ahmed Abdelali, Irina Temnikova, Hassan Sajjad and Stephan Vogel

Local System Voting Feature for Machine Translation System Combination

Markus Freitag, Jan-Thorsten Peter, Stephan Peitz, Minwei Feng and Hermann Ney

15:20–16:00 Coffee Break

Friday, September 18, 2015 (continued)

16:00–17:00 Session 10: Closing and Open Discussion