

**WMT 2013**

**8th Workshop  
on  
Statistical Machine Translation**

**Proceedings of the Workshop**

**August 8-9, 2013  
Sofia, Bulgaria**

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## Preface

The ACL 2013 Workshop on Statistical Machine Translation (WMT 2013) took place on Thursday and Friday, August 8–9, 2013 in Sofia, Bulgaria, immediately following the Conference of the Association for Computational Linguistics (ACL).

This is the eighth 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, and NAACL 2012 in Montréal, Canada.

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 three shared tasks: a translation task, a quality estimation task, and a task to test automatic evaluation metrics. The results of the 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 32 full paper submissions and 46 shared task submissions. In total WMT-2013 featured 18 full paper oral presentations and 45 shared task poster presentations.

The invited talk was given by Andreas Eisele (Directorate-General for Translation at the European Commission, Luxembourg) entitled “Machine Translation at the European Commission: Serving the multilingual needs of the European Commission”.

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, Christian Buck, Chris Callison-Burch, Barry Haddow, Philipp Koehn, Christof Monz, Matt Post, Hervé Saint-Amand, Radu Soricut, and Lucia Specia

## WMT 5-year Retrospective Best Paper Award

Each year WMT awards a 5-year Retrospective Best Paper Award. This year we selected the best paper from 2008's Workshop on Statistical Machine Translation, which was collocated with ACL in Columbus, Ohio. The goals of this retrospective award are to recognize high-quality work that has stood the test of time, and to highlight the excellent work that appears at WMT.

37 members of the WMT13 program committee voted on the best paper from a list of seven nominated papers. These were nominated by selecting the papers with the most non-self-citations in the ACL anthology network. This year the vote was very close, and was divided between several excellent papers. Ultimately, the program committee decided to award the WMT 5-year Retrospective Best Paper Award to:

Kevin Gimpel and Noah A. Smith. 2008. *Rich Source-Side Context for Statistical Machine Translation*. In Proceedings of the Workshop on Statistical Machine Translation. Pages 9-17.

In this paper, Gimpel and Smith used a variety of features, including surrounding words and part-of-speech tags, local syntactic structure, and other properties of the source language sentence to help predict each phrase's translation. They argued that source side features were easier to exploit than target side features, and that they were likely to make a bigger impact, since some target side features are already exploited via the language model. Gimpel and Smith empirically demonstrated the value of their model by augmenting the baseline Moses MT system and fielding an entry into the English-to-German shared task at WMT that year.

One of the program committee members, Preslav Nakov, commented that this work made an important contribution in the direction of context-aware SMT, which has been largely neglected in mainstream SMT research.

Congratulations to Kevin Gimpel and Noah Smith on their excellent work!

**Organizers:**

Ondřej Bojar (Charles University)  
Christian Buck (University of Edinburgh)  
Chris Callison-Burch (Johns Hopkins University)  
Barry Haddow (University of Edinburgh)  
Philipp Koehn (University of Edinburgh)  
Christof Monz (University of Amsterdam)  
Matt Post (Johns Hopkins University)  
Hervé Saint-Amand (University of Edinburgh)  
Radu Soricut (Google)  
Lucia Specia (University of Sheffield)

**Invited Talk:**

Andreas Eisele (European Commission)

**Program Committee:**

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Markos Mylonakis (Xerox Research Centre Europe)  
Preslav Nakov (Qatar Computing Research Institute, Qatar Foundation)  
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## Table of Contents

<i>Findings of the 2013 Workshop on Statistical Machine Translation</i> Ondřej Bojar, Christian Buck, Chris Callison-Burch, Christian Federmann, Barry Haddow, Philipp Koehn, Christof Monz, Matt Post, Radu Soricut and Lucia Specia .....	1
<i>Results of the WMT13 Metrics Shared Task</i> Matouš Macháček and Ondřej Bojar .....	45
<i>The Feasibility of HMEANT as a Human MT Evaluation Metric</i> Alexandra Birch, Barry Haddow, Ulrich Germann, Maria Nadejde, Christian Buck and Philipp Koehn .....	52
<i>LIMSI @ WMT13</i> Alexander Allauzen, Nicolas Pécheux, Quoc Khanh Do, Marco Dinarelli, Thomas Lavergne, Aurélien Max, Hai-Son Le and François Yvon .....	62
<i>The CMU Machine Translation Systems at WMT 2013: Syntax, Synthetic Translation Options, and Pseudo-References</i> Waleed Ammar, Victor Chahuneau, Michael Denkowski, Greg Hanneman, Wang Ling, Austin Matthews, Kenton Murray, Nicola Segall, Alon Lavie and Chris Dyer .....	70
<i>Feature Decay Algorithms for Fast Deployment of Accurate Statistical Machine Translation Systems</i> Ergun Biciçi .....	78
<i>CUni Multilingual Matrix in the WMT 2013 Shared Task</i> Karel Bílek and Daniel Zeman .....	85
<i>Chimera – Three Heads for English-to-Czech Translation</i> Ondřej Bojar, Rudolf Rosa and Aleš Tamchyna .....	92
<i>Yandex School of Data Analysis Machine Translation Systems for WMT13</i> Alexey Borisov, Jacob Dlougach and Irina Galinskaya .....	99
<i>The Karlsruhe Institute of Technology Translation Systems for the WMT 2013</i> Eunah Cho, Thanh-Le Ha, Mohammed Mediani, Jan Niehues, Teresa Herrmann, Isabel Slawik and Alex Waibel .....	104
<i>TÜBİTAK-BİLGEM German-English Machine Translation Systems for W13</i> Ilknur Durgar El-Kahlout and Coşkun Mermer .....	109
<i>Edinburgh’s Machine Translation Systems for European Language Pairs</i> Nadir Durrani, Barry Haddow, Kenneth Heafield and Philipp Koehn .....	114
<i>Munich-Edinburgh-Stuttgart Submissions of OSM Systems at WMT13</i> Nadir Durrani, Alexander Fraser, Helmut Schmid, Hassan Sajjad and Richárd Farkas .....	122
<i>Towards Efficient Large-Scale Feature-Rich Statistical Machine Translation</i> Vladimir Eidelman, Ke Wu, Ferhan Ture, Philip Resnik and Jimmy Lin .....	128
<i>The TALP-UPC Phrase-Based Translation Systems for WMT13: System Combination with Morphology Generation, Domain Adaptation and Corpus Filtering</i> Lluís Formiga, Marta R. Costa-jussà, José B. Mariño, José A. R. Fonollosa, Alberto Barrón-Cedeño and Lluís Marquez .....	134

<i>PhraseFix: Statistical Post-Editing of TectoMT</i>	
Petra Galuščáková, Martin Popel and Ondřej Bojar .....	141
<i>Feature-Rich Phrase-based Translation: Stanford University's Submission to the WMT 2013 Translation Task</i>	
Spence Green, Daniel Cer, Kevin Reschke, Rob Voigt, John Bauer, Sida Wang, Natalia Silveira, Julia Neidert and Christopher D. Manning .....	148
<i>Factored Machine Translation Systems for Russian-English</i>	
Stéphane Huet, Elena Manishina and Fabrice Lefèvre .....	154
<i>Omnifluent English-to-French and Russian-to-English Systems for the 2013 Workshop on Statistical Machine Translation</i>	
Evgeny Matusov and Gregor Leusch .....	158
<i>Pre-Reordering for Machine Translation Using Transition-Based Walks on Dependency Parse Trees</i>	
Antonio Valerio Miceli Barone and Giuseppe Attardi .....	164
<i>Edinburgh's Syntax-Based Machine Translation Systems</i>	
Maria Nadejde, Philip Williams and Philipp Koehn .....	170
<i>Shallow Semantically-Informed PBSMT and HPBSMT</i>	
Tsuyoshi Okita, Qun Liu and Josef van Genabith .....	177
<i>Joint WMT 2013 Submission of the QUAERO Project</i>	
Stephan Peitz, Saab Mansour, Matthias Huck, Markus Freitag, Hermann Ney, Eunah Cho, Teresa Herrmann, Mohammed Mediani, Jan Niehues, Alex Waibel, Alexander Allauzen, Quoc Khanh Do, Bianka Buschbeck and Tonio Wandmacher .....	185
<i>The RWTH Aachen Machine Translation System for WMT 2013</i>	
Stephan Peitz, Saab Mansour, Jan-Thorsten Peter, Christoph Schmidt, Joern Wuebker, Matthias Huck, Markus Freitag and Hermann Ney .....	193
<i>The University of Cambridge Russian-English System at WMT13</i>	
Juan Pino, Aurelien Waite, Tong Xiao, Adrià de Gispert, Federico Flego and William Byrne ..	200
<i>Joshua 5.0: Sparser, Better, Faster, Server</i>	
Matt Post, Juri Ganitkevitch, Luke Orland, Jonathan Weese, Yuan Cao and Chris Callison-Burch	206
<i>The CNGL-DCU-Prompsit Translation Systems for WMT13</i>	
Raphael Rubino, Antonio Toral, Santiago Cortés Vaíllo, Jun Xie, Xiaofeng Wu, Stephen Doherty and Qun Liu .....	213
<i>QCRI-MES Submission at WMT13: Using Transliteration Mining to Improve Statistical Machine Translation</i>	
Hassan Sajjad, Svetlana Smekalova, Nadir Durrani, Alexander Fraser and Helmut Schmid ....	219
<i>Tunable Distortion Limits and Corpus Cleaning for SMT</i>	
Sara Stymne, Christian Hardmeier, Jörg Tiedemann and Joakim Nivre .....	225
<i>Munich-Edinburgh-Stuttgart Submissions at WMT13: Morphological and Syntactic Processing for SMT</i>	
Marion Weller, Max Kisselew, Svetlana Smekalova, Alexander Fraser, Helmut Schmid, Nadir Durrani, Hassan Sajjad and Richárd Farkas .....	232

<i>Coping with the Subjectivity of Human Judgements in MT Quality Estimation</i> Marco Turchi, Matteo Negri and Marcello Federico .....	240
<i>Online Polylingual Topic Models for Fast Document Translation Detection</i> Kriste Krstovski and David A. Smith .....	252
<i>Combining Bilingual and Comparable Corpora for Low Resource Machine Translation</i> Ann Irvine and Chris Callison-Burch .....	262
<i>Generating English Determiners in Phrase-Based Translation with Synthetic Translation Options</i> Yulia Tsvetkov, Chris Dyer, Lori Levin and Archna Bhatia .....	271
<i>Dramatically Reducing Training Data Size Through Vocabulary Saturation</i> William Lewis and Sauleh Eetemadi .....	281
<i>Multi-Task Learning for Improved Discriminative Training in SMT</i> Patrick Simianer and Stefan Riezler .....	292
<i>Online Learning Approaches in Computer Assisted Translation</i> Prashant Mathur, Cettolo Mauro and Marcello Federico .....	301
<i>Length-Incremental Phrase Training for SMT</i> Joern Wuebker and Hermann Ney .....	309
<i>Positive Diversity Tuning for Machine Translation System Combination</i> Daniel Cer, Christopher D. Manning and Dan Jurafsky .....	320
<i>Selecting Feature Sets for Comparative and Time-Oriented Quality Estimation of Machine Translation Output</i> Eleftherios Avramidis and Maja Popovic .....	329
<i>SHEF-Lite: When Less is More for Translation Quality Estimation</i> Daniel Beck, Kashif Shah, Trevor Cohn and Lucia Specia .....	337
<i>Referential Translation Machines for Quality Estimation</i> Ergun Bicici .....	343
<i>FBK-UEdin Participation to the WMT13 Quality Estimation Shared Task</i> José Guilherme Camargo de Souza, Christian Buck, Marco Turchi and Matteo Negri .....	352
<i>The TALP-UPC Approach to System Selection: Asiya Features and Pairwise Classification Using Random Forests</i> Lluís Formiga, Meritxell González, Alberto Barrón-Cedeño, José A. R. Fonollosa and Lluís Marquez .....	359
<i>Quality Estimation for Machine Translation Using the Joint Method of Evaluation Criteria and Statistical Modeling</i> Aaron Li-Feng Han, Yi Lu, Derek F. Wong, Lidia S. Chao, Liangye He and Junwen Xing .....	365
<i>MT Quality Estimation: The CMU System for WMT'13</i> Silja Hildebrand and Stephan Vogel .....	373
<i>LORIA System for the WMT13 Quality Estimation Shared Task</i> David Langlois and Kamel Smaili .....	380

<i>LIG System for WMT13 QE Task: Investigating the Usefulness of Features in Word Confidence Estimation for MT</i>	
Ngoc Quang Luong, Benjamin Lecouteux and Laurent Besacier . . . . .	386
<i>DCU-Symantec at the WMT 2013 Quality Estimation Shared Task</i>	
Raphael Rubino, Joachim Wagner, Jennifer Foster, Johann Roturier, Rasoul Samad Zadeh Kaljahi and Fred Hollowood . . . . .	392
<i>LIMSI Submission for the WMT'13 Quality Estimation Task: an Experiment with N-Gram Posteriors</i>	
Anil Kumar Singh, Guillaume Wisniewski and François Yvon . . . . .	398
<i>Ranking Translations using Error Analysis and Quality Estimation</i>	
Mark Fishel . . . . .	405
<i>Are ACT's Scores Increasing with Better Translation Quality?</i>	
Najeh Hajlaoui . . . . .	408
<i>A Description of Tunable Machine Translation Evaluation Systems in WMT13 Metrics Task</i>	
Aaron Li-Feng Han, Derek F. Wong, Lidia S. Chao, Yi Lu, Liangye He, Yiming Wang and Jiaji Zhou . . . . .	414
<i>MEANT at WMT 2013: A Tunable, Accurate yet Inexpensive Semantic Frame Based MT Evaluation Metric</i>	
Chi-kiu Lo and Dekai Wu . . . . .	422
<i>An Approach Using Style Classification Features for Quality Estimation</i>	
Erwan Moreau and Raphael Rubino . . . . .	429
<i>DCU Participation in WMT2013 Metrics Task</i>	
Xiaofeng Wu, Hui Yu and Qun Liu . . . . .	435
<i>Efficient Solutions for Word Reordering in German-English Phrase-Based Statistical Machine Translation</i>	
Arianna Bisazza and Marcello Federico . . . . .	440
<i>A Phrase Orientation Model for Hierarchical Machine Translation</i>	
Matthias Huck, Joern Wuebker, Felix Rietig and Hermann Ney . . . . .	452
<i>A Dependency-Constrained Hierarchical Model with Moses</i>	
Yvette Graham . . . . .	464
<i>Investigations in Exact Inference for Hierarchical Translation</i>	
Wilker Aziz, Marc Dymetman and Sriram Venkatapathy . . . . .	472
<i>Evaluating (and Improving) Sentence Alignment under Noisy Conditions</i>	
Omar Zaidan and Vishal Chowdhary . . . . .	484
<i>Multi-Rate HMMs for Word Alignment</i>	
Elif Eyigöz, Daniel Gildea and Kemal Oflazer . . . . .	494
<i>Hidden Markov Tree Model for Word Alignment</i>	
Shuhei Kondo, Kevin Duh and Yuji Matsumoto . . . . .	503
<i>An MT Error-Driven Discriminative Word Lexicon using Sentence Structure Features</i>	
Jan Niehues and Alex Waibel . . . . .	512

# Workshop Program

**Thursday, August 8, 2013**

9:00–9:10      Opening Remarks

## **Session 1: Shared Tasks and their Evaluation**

9:10–10:10    *Findings of the 2013 Workshop on Statistical Machine Translation*  
Ondrej Bojar, Christian Buck, Chris Callison-Burch, Christian Federmann, Barry Haddow, Philipp Koehn, Christof Monz, Matt Post, Radu Soricut and Lucia Specia

*Results of the WMT13 Metrics Shared Task*  
Matous Machacek and Ondrej Bojar

10:10–10:30   *The Feasibility of HMEANT as a Human MT Evaluation Metric*  
Alexandra Birch, Barry Haddow, Ulrich Germann, Maria Nadejde, Christian Buck and Philipp Koehn

10:30–11:00   Coffee

## **Session 2: Poster Session**

11:00–12:30   Shared Task: Translation

*LIMSI @ WMT13*  
Alexander Allauzen, Nicolas Pécheux, Quoc Khanh Do, Marco Dinarelli, Thomas Lavergne, Aurélien Max, Hai-Son Le and François Yvon

*The CMU Machine Translation Systems at WMT 2013: Syntax, Synthetic Translation Options, and Pseudo-References*  
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**Thursday, August 8, 2013 (continued)**

*Edinburgh's Syntax-Based Machine Translation Systems*

Maria Nadejde, Philip Williams and Philipp Koehn

*Shallow Semantically-Informed PBSMT and HPBSMT*

Tsuyoshi Okita, Qun Liu and Josef van Genabith

*Joint WMT 2013 Submission of the QUAERO Project*

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Marion Weller, Max Kisselew, Svetlana Smekalova, Alexander Fraser, Helmut Schmid, Nadir Durrani, Hassan Sajjad and Richárd Farkas

12:30–14:00 Lunch Break

**Thursday, August 8, 2013 (continued)**

**Session 3: Invited Talk**

14:00–15:10 Andreas Eisele: MT@EC: Serving the multilingual needs of the European Commission

**Session 4: Quality Estimation**

15:10–15:30 *Coping with the Subjectivity of Human Judgements in MT Quality Estimation*  
Marco Turchi, Matteo Negri and Marcello Federico

15:30–16:00 Coffee Break

**Session 5: Translation Models**

16:00–16:20 *Online Polylingual Topic Models for Fast Document Translation Detection*  
Kriste Krstovski and David A. Smith

16:20–16:40 *Combining Bilingual and Comparable Corpora for Low Resource Machine Translation*  
Ann Irvine and Chris Callison-Burch

16:40–17:00 *Generating English Determiners in Phrase-Based Translation with Synthetic Translation Options*  
Yulia Tsvetkov, Chris Dyer, Lori Levin and Archana Bhatia

17:00–17:20 *Dramatically Reducing Training Data Size Through Vocabulary Saturation*  
William Lewis and Sauleh Eetemadi



**Friday, August 9, 2013**

**Session 6: Learning**

- 9:00–9:20 *Multi-Task Learning for Improved Discriminative Training in SMT*  
Patrick Simianer and Stefan Riezler
- 9:20–9:40 *Online Learning Approaches in Computer Assisted Translation*  
Prashant Mathur, Cettolo Mauro and Marcello Federico
- 9:40–10:00 *Length-Incremental Phrase Training for SMT*  
Joern Wuebker and Hermann Ney
- 10:00–10:20 *Positive Diversity Tuning for Machine Translation System Combination*  
Daniel Cer, Christopher D. Manning and Dan Jurafsky
- 10:20–11:00 Coffee Break

**Session 7: Poster Session**

- 11:00–12:30 Shared Task: Quality Estimation
- Selecting Feature Sets for Comparative and Time-Oriented Quality Estimation of Machine Translation Output*  
Eleftherios Avramidis and Maja Popovic
- SHEF-Lite: When Less is More for Translation Quality Estimation*  
Daniel Beck, Kashif Shah, Trevor Cohn and Lucia Specia
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José Guilherme Camargo de Souza, Christian Buck, Marco Turchi and Matteo Negri
- The TALP-UPC Approach to System Selection: Asiya Features and Pairwise Classification Using Random Forests*  
Lluís Formiga, Meritxell González, Alberto Barrón-Cedeño, José A. R. Fonollosa and Lluís Marquez
- Quality Estimation for Machine Translation Using the Joint Method of Evaluation Criteria and Statistical Modeling*  
Aaron Li-Feng Han, Yi Lu, Derek F. Wong, Lidia S. Chao, Liangye He and Junwen Xing

**Friday, August 9, 2013 (continued)**

*MT Quality Estimation: The CMU System for WMT'13*

Silja Hildebrand and Stephan Vogel

*LORIA System for the WMT13 Quality Estimation Shared Task*

David Langlois and Kamel Smaili

*LIG System for WMT13 QE Task: Investigating the Usefulness of Features in Word Confidence Estimation for MT*

Ngoc Quang Luong, Benjamin Lecouteux and Laurent Besacier

*DCU-Symantec at the WMT 2013 Quality Estimation Shared Task*

Raphael Rubino, Joachim Wagner, Jennifer Foster, Johann Roturier, Rasoul Samad Zadeh Kaljahi and Fred Hollowood

*LIMSI Submission for the WMT'13 Quality Estimation Task: an Experiment with N-Gram Posteriors*

Anil Kumar Singh, Guillaume Wisniewski and François Yvon

11:00–12:30 Shared Task: Evaluation

*Ranking Translations using Error Analysis and Quality Estimation*

Mark Fishel

*Are ACT's Scores Increasing with Better Translation Quality?*

Najeh Hajlaoui

*A Description of Tunable Machine Translation Evaluation Systems in WMT13 Metrics Task*

Aaron Li-Feng Han, Derek F. Wong, Lidia S. Chao, Yi Lu, Liangye He, Yiming Wang and Jiaji Zhou

*MEANT at WMT 2013: A tunable, accurate yet inexpensive semantic frame based MT evaluation metric*

Chi-kiu Lo and Dekai Wu

*An Approach Using Style Classification Features for Quality Estimation*

Erwan Moreau and Raphael Rubino

*DCU Participation in WMT2013 Metrics Task*

Xiaofeng Wu, Hui Yu and Qun Liu

12:30–14:00 Lunch Break

**Friday, August 9, 2013 (continued)**

**Session 8: Reordering and Hierarchical Models**

- 14:00–14:20 *Efficient Solutions for Word Reordering in German-English Phrase-Based Statistical Machine Translation*  
Arianna Bisazza and Marcello Federico
- 14:20–14:40 *A Phrase Orientation Model for Hierarchical Machine Translation*  
Matthias Huck, Joern Wuebker, Felix Rietig and Hermann Ney
- 14:40–15:00 *A Dependency-Constrained Hierarchical Model with Moses*  
Yvette Graham
- 15:00–15:20 *Investigations in Exact Inference for Hierarchical Translation*  
Wilker Aziz, Marc Dymetman and Sriram Venkatapathy
- 15:20–16:00 Coffee Break

**Session 9: Alignment and Word Translation Models**

- 16:00–16:20 *Evaluating (and Improving) Sentence Alignment under Noisy Conditions*  
Omar Zaidan and Vishal Chowdhary
- 16:20–16:40 *Multi-Rate HMMs for Word Alignment*  
Elif Eyigöz, Daniel Gildea and Kemal Oflazer
- 16:40–17:00 *Hidden Markov Tree Model for Word Alignment*  
Shuhei Kondo, Kevin Duh and Yuji Matsumoto
- 17:00–17:20 *An MT Error-Driven Discriminative Word Lexicon using Sentence Structure Features*  
Jan Niehues and Alex Waibel

