

EACL 2014

**14th Conference of the European Chapter of the  
Association for Computational Linguistics**



**Proceedings of the Workshop on Humans and  
Computer-assisted Translation  
(HaCaT)**

26 April 2014  
Gothenburg, Sweden

©2014 The Association for Computational Linguistics

Order copies of this and other ACL proceedings from:

Association for Computational Linguistics (ACL)  
209 N. Eighth Street  
Stroudsburg, PA 18360  
USA  
Tel: +1-570-476-8006  
Fax: +1-570-476-0860  
[acl@aclweb.org](mailto:acl@aclweb.org)

ISBN 978-1-937284-82-4

## Introduction

The quality of automatic translation of human languages has improved tremendously over the past decade or so. While they still do not achieve publication-quality performance in most cases, state-of-the-art machine translation systems can now deliver a level of quality that make the post-editing of raw machine output by human translators a viable and cost-effective alternative to translation from scratch. Moreover, computerized workflow management can improve consistency in translation, in particular with respect to terminology, and can give translators easy access to dictionaries, glossaries and databases of past translations.

Much research in the machine translation community in the past has focused on improving fully automatic MT, but interest in integrating information technology — and specifically machine translation technology — into the translator’s workflow is growing in many areas of research: in machine translation research as to how best to provide useful information to the human translator, in translation tool development as to how to make the best use of this information, and in translation process studies in understanding the cognitive and physical processes that take place when humans post-edit or interact with computer-produced translations.

This workshop brings together researchers investigating issues in human-computer interaction in the context of translation from a variety of research angles. We have been able to assemble a wonderful roster of talks, posters and system demonstrations that nicely illustrate the current state of research, and we look forward to a productive day of learning and fruitful discussions.

Enjoy!

Ulrich Germann  
Michael Carl  
Philipp Koehn  
Germán Sanchis-Trilles  
Francisco Casacuberta  
Robin Hill  
Sharon O’Brien



## **Workshop Organisers**

Ulrich Germann, University of Edinburgh (UK)  
Michael Carl, Copenhagen Business School (Denmark)  
Philipp Koehn, Johns Hopkins University (USA)  
Germán Sanchis-Trilles, Universitat Politècnica de València (Spain)  
Francisco Casacuberta, Universitat Politècnica de València (Spain)  
Robin Hill, University of Edinburgh (UK)  
Sharon O'Brien, Dublin City University (Ireland)

## **Programme Committee**

Fabio Alves	Philippe Langlais
Srinivas Bangalore	Guy Lapalme
Nicola Bertoldi	Pascual Martínez-Gómez
Pierrette Bouillon	Cettolo Mauro
Christian Buck	Bertolomé Mesa-Lao
Michael Carl	Matteo Negri
Francisco Casacuberta	Sharon O'Brien
George Foster	Manny Rayner
Robert Frederking	Germán Sanchis-Trilles
Johanna Gerlach	Violeta Seretan
Ulrich Germann	Christophe Servan
Barry Haddow	Michel Simard
Robin Hill	Lucia Specia
Fred Hollowood	Sara Stymne
Pierre Isabelle	Marco Turchi
Philipp Koehn	Bonnie Webber
Roland Kuhn	

This workshop was supported by the European Union 7<sup>th</sup> Framework Programme (FP7/2007-2013) under the CASMACAT project (grant agreement N° 287576).



## Table of Contents

<i>Word Confidence Estimation for SMT N-best List Re-ranking</i> Ngoc Quang Luong, Laurent Besacier and Benjamin Lecouteux .....	1
<i>Proofreading Human Translations with an E-pen</i> Vicent Alabau and Luis A. Leiva .....	10
<i>Estimating Grammar Correctness for a Priori Estimation of Machine Translation Post-Editing Effort</i> Nicholas H. Kirk, Guchun Zhang and Georg Groh .....	16
<i>On-The-Fly Translator Assistant (Readability and Terminology Handling)</i> Svetlana Sheremetyeva .....	22
<i>Translators in the Loop: Understanding How they Work with CAT Tools</i> Maureen Ehrensberger-Dow .....	28
<i>Measuring the Cognitive Effort of Literal Translation Processes</i> Moritz Schaeffer and Michael Carl .....	29
<i>The Impact of Machine Translation Quality on Human Post-Editing</i> Philipp Koehn and Ulrich Germann .....	38
<i>Beyond Linguistic Equivalence. An Empirical Study of Translation Evaluation in a Translation Learner Corpus</i> Mihaela Vela, Anne-Kathrin Schumann and Andrea Wurm .....	47
<i>Black-box integration of heterogeneous bilingual resources into an interactive translation system</i> Juan Antonio Pérez-Ortiz, Daniel Torregrosa and Mikel Forcada .....	57
<i>The ACCEPT Portal: An Online Framework for the Pre-editing and Post-editing of User-Generated Content</i> Violeta Seretan, Johann Roturier, David Silva and Pierrette Bouillon .....	66
<i>Real Time Adaptive Machine Translation for Post-Editing with cdec and TransCenter</i> Michael Denkowski, Alon Lavie, Isabel Lacruz and Chris Dyer .....	72
<i>Confidence-based Active Learning Methods for Machine Translation</i> Varvara Logacheva and Lucia Specia .....	78
<i>Online Word Alignment for Online Adaptive Machine Translation</i> M. Amin Farajian, Nicola Bertoldi and Marcello Federico .....	84
<i>Quantifying the Influence of MT Output in the Translators' Performance: A Case Study in Technical Translation</i> Marcos Zampieri and Mihaela Vela .....	93
<i>Speech-Enabled Computer-Aided Translation: A Satisfaction Survey with Post-Editor Trainees</i> Bartolomé Mesa-Lao .....	99





# Conference Program

## Saturday, 26 April 2014

8:50–9:00 Opening Remarks

### Session 1: Oral Presentations

9:00–9:30 *Word Confidence Estimation for SMT N-best List Re-ranking*  
Ngoc Quang Luong, Laurent Besacier and Benjamin Lecouteux

9:30–9:50 *Proofreading Human Translations with an E-pen*  
Vicent Alabau and Luis A. Leiva

9:50–10:10 *Estimating Grammar Correctness for a Priori Estimation of Machine Translation Post-Editing Effort*  
Nicholas H. Kirk, Guchun Zhang and Georg Groh

10:10–10:30 *On-The-Fly Translator Assistant (Readability and Terminology Handling)*  
Svetlana Sheremetyeva

10:30-11:00 Coffee Break

### Invited Talk

11:00–12:00 *Translators in the Loop: Understanding How they Work with CAT Tools*  
Maureen Ehrensberger-Dow

12:-13:30 Lunch Break

### Session 2: Oral Presentations

13:30–14:00 *Measuring the Cognitive Effort of Literal Translation Processes*  
Moritz Schaeffer and Michael Carl

14:00–14:30 *The Impact of Machine Translation Quality on Human Post-Editing*  
Philipp Koehn and Ulrich Germann

14:30–15:00 *Beyond Linguistic Equivalence. An Empirical Study of Translation Evaluation in a Translation Learner Corpus*  
Mihaela Vela, Anne-Kathrin Schumann and Andrea Wurm

15:00–15:30 *Black-box integration of heterogeneous bilingual resources into an interactive translation system*  
Juan Antonio Pérez-Ortiz, Daniel Torregrosa and Mikel Forcada

15:30-16:00 Coffee Break

**Saturday, 26 April 2014 (continued)**

**System Demos**

- 16:00-18:00 *The ACCEPT Portal: An Online Framework for the Pre-editing and Post-editing of User-Generated Content*  
Violeta Seretan, Johann Roturier, David Silva and Pierrette Bouillon
- 16:00-18:00 *Real Time Adaptive Machine Translation for Post-Editing with cdec and TransCenter*  
Michael Denkowski, Alon Lavie, Isabel Lacruz and Chris Dyer

**Poster Session**

- 16:00-18:00 *Confidence-based Active Learning Methods for Machine Translation*  
Varvara Logacheva and Lucia Specia
- 16:00-18:00 *Online Word Alignment for Online Adaptive Machine Translation*  
M. Amin Farajian, Nicola Bertoldi and Marcello Federico
- 16:00-18:00 *Quantifying the Influence of MT Output in the Translators' Performance: A Case Study in Technical Translation*  
Marcos Zampieri and Mihaela Vela
- 16:00-18:00 *Speech-Enabled Computer-Aided Translation: A Satisfaction Survey with Post-Editor Trainees*  
Bartolomé Mesa-Lao