INLG 2017

# The 10th International Natural Language Generation conference

**Proceedings of the Conference** 

September 4-7, 2017 Santiago de Compostela, Spain ©2017 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

ISBN 978-1-945626-52-4

## Introduction

Welcome to the Proceedings of the 10th International Natural Language Generation Conference (INLG 2017)! INLG is the annual meeting of the ACL Special Interest Group on Natural Language Generation (SIGGEN). The INLG conference provides the premier forum for the discussion, dissemination, and archiving of research and results in the field of Natural Language Generation (NLG). This edition is singular, since for the first time it absorbs under the INLG umbrella the former European Workshop on Natural Language Generation (ENLG) that was celebrated for many years. Previous INLG conferences have been held in Australia, Germany, Greece, Ireland, Israel, the UK and the USA. Prior to 2000, these meetings were held as international workshops with a history stretching back to 1983. In 2017, INLG was organized in Santiago de Compostela, Spain, a UNESCO World Heritage City since 1985. The venues were the School of Engineering and the Research Center in Information Tecnology of the University of Santiago de Compostela.

The INLG 2017 program included presentations of substantial, original, and previously unpublished results on all topics related to NLG. This year, INLG has hosted the following workshops on: Linguistic Resources for Automatic Natural Language Generation (LiRA 2017), Recent Advances in RST and Related Formalisms (RST 2017), Explainable Computational Intelligence (XCI 2017) and Computational Creativity in Natural Language Generation (CC-NLG).

This year we received 56 submissions (27 long papers, 23 short papers and 6 demos). 37 submissions were accepted, more specifically, 15 as long papers (11 oral presentations, 4 posters), 16 as short papers (3 oral presentations, 13 posters), and the 6 submitted demos. In addition, INLG 2017 included two invited talks by Gemma Boleda (Universitat Pompeu Fabra) and Frank Schilder (Thomson Reuters Research & Development). Also an invited tutorial by Ehud Reiter and the 2nd Edition of the SIGGEN Hackathon, organized by Yaji Sripada, were held during the Conference.

As the organizing committee, we would like to thank our invited speakers for agreeing to join us and to the authors of all submitted papers. In addition, we thank the program committee members and anonymous reviewers for their outstanding work. We have also received sponsorships from Arria, Accenture and Phrasee, for which we are extremely grateful. We hope that you have had an enjoyable and inspiring stay in Santiago de Compostela!

Jose M. Alonso, Alberto Bugarín and Ehud Reiter INLG 2017 Co-Chairs

#### **General and Programme Chairs:**

Jose M. Alonso Alberto Bugarín Ehud Reiter

#### Workshop Chairs:

Pablo Gervás Elena Lloret

#### **Tutorial and Invited Talks Chair:**

Dimitra Gkatzia

#### **Hackathon Chair:**

Yaji Sripada

#### **Publicity Chair:**

Ichiro Kobayashi

#### **Publication Chairs:**

Alejandro Ramos-Soto Cristina Barros Marta Vicente

#### **Local Organization Committee:**

Cristina Barros Senén Barro Susana Bautista Blasco Manuel Lama Penín Gonzalo Méndez Manuel Mucientes Molina Martín Pereira Fariña Alejandro Ramos-Soto Marta Vicente

#### **Program Committee:**

Jose M. Alonso Anja Belz Alberto Bugarín

Rodrigo de Oliveira Nina Dethlefs Nikolaos Engonopoulos Macarena Espinilla Claire Gardent Albert Gatt Pablo Gervás Dimitra Gkatzia Helen Hastie David M. Howcroft Amy Isard Janusz Kacprzyk John Kelleher Ioannis Konstas Emiel Krahmer Cyril Labbe Guy Lapalme Elena Lloret Saad Mahamood David McDonald Simon Mille Elena Montiel-Ponsoda Laura Perez-Beltrachini Paul Piwek François Portet Alejandro Ramos-Soto Ehud Reiter Daniel Sánchez David Schlangen Advaith Siddharthan Somayajulu Sripada Amanda Stent Kristina Striegnitz Mariët Theune Kees van Deemter Ielka van der Sluis Keith Vander Linden Andreas Vlachos Leo Wanner Michael White Sander Wubben Sina Zarrieß

#### **Session Chairs:**

Claire Gardent Susana Bautista Emiel Krahmer Helmut Horacek Amy Isard Yaji Sripada Ehud Reiter Jose M. Alonso Albert Gatt Siimon Mille Kees van Deemter Alejandro Ramos-Soto Alberto Bugarín

### **Invited Speakers:**

Gemma Boleda (Universitat Pompeu Fabra) Frank Schilder (Thomson Reuters Research & Development)

## **Table of Contents**

Linguistic realisation as machine translation: Comparing different MT models for AMR-to-text gener- ation
Thiago Castro Ferreira, Iacer Calixto, Sander Wubben and Emiel Krahmer
A Survey on Intelligent Poetry Generation: Languages, Features, Techniques, Reutilisation and Evalu- ation Hugo Gonçalo Oliveira
Cross-linguistic differences and similarities in image descriptions Emiel van Miltenburg, Desmond Elliott and Piek Vossen
Content Selection for Real-time Sports News Construction from Commentary Texts Jin-ge Yao, Jianmin Zhang, Xiaojun Wan and Jianguo Xiao
<i>Improving the Naturalness and Expressivity of Language Generation for Spanish</i> Cristina Barros, Dimitra Gkatzia and Elena Lloret
What is the Role of Recurrent Neural Networks (RNNs) in an Image Caption Generator?   Marc Tanti, Albert Gatt and Kenneth Camilleri   51
<i>Exploring the Behavior of Classic REG Algorithms in the Description of Characters in 3D Images</i> Gonzalo Méndez, Raquel Hervás, Susana Bautista, Adrian Rabadan and Teresa Rodriguez61
<i>Co-PoeTryMe: a Co-Creative Interface for the Composition of Poetry</i> Hugo Gonçalo Oliveira, Tiago Mendes and Ana Boavida
Refer-iTTS: A System for Referring in Spoken Installments to Objects in Real-World ImagesSina Zarrieß, M. Soledad López Gambino and David Schlangen
Finding the "right" answers for customers Frank Schilder
Referring Expression Generation under Uncertainty: Algorithm and Evaluation Framework   Tom Williams and Matthias Scheutz 75
Natural Language Descriptions for Human Activities in Video Streams   Nouf Alharbi and Yoshihiko Gotoh   85
PASS: A Dutch data-to-text system for soccer, targeted towards specific audiences Chris van der Lee, Emiel Krahmer and Sander Wubben
<i>Evaluation of a Runyankore grammar engine for healthcare messages</i> Joan Byamugisha, C. Maria Keet and Brian DeRenzi105
Talking about the world with a distributed model   Gemma Boleda 114

The Code2Text Challenge: Text Generation in Source LibrariesKyle Richardson, Sina Zarrieß and Jonas Kuhn115
<i>Shared Task Proposal: Multilingual Surface Realization Using Universal Dependency Trees</i> Simon Mille, Bernd Bohnet, Leo Wanner and Anja Belz
<i>The WebNLG Challenge: Generating Text from RDF Data</i> Claire Gardent, Anastasia Shimorina, Shashi Narayan and Laura Perez-Beltrachini124
A Commercial Perspective on Reference Ehud Reiter
Integrated sentence generation using charts Alexander Koller and Nikos Engonopoulos
Adapting SimpleNLG to Spanish Alejandro Ramos Soto, Julio Janeiro Gallardo and Alberto Bugarín Diz144
<i>G-TUNA: a corpus of referring expressions in German, including duration information</i> David Howcroft, Jorrig Vogels and Vera Demberg
Toward an NLG System for Bantu languages: first steps with Runyankore (demo)Joan Byamugisha, C. Maria Keet and Brian DeRenzi154
A working, non-trivial, topically indifferent NLG System for 17 languages Robert Weißgraeber and Andreas Madsack
Generating titles for millions of browse pages on an e-Commerce site Prashant Mathur, Nicola Ueffing and Gregor Leusch
Towards Automatic Generation of Product Reviews from Aspect-Sentiment Scores   Hongyu Zang and Xiaojun Wan
A model of suspense for narrative generation Richard Doust and Paul Piwek
Data-Driven News Generation for Automated JournalismLeo Leppänen, Myriam Munezero, Mark Granroth-Wilding and Hannu Toivonen
Data Augmentation for Visual Question AnsweringKushal Kafle, Mohammed Yousefhussien and Christopher Kanan
Personalized Questions, Answers and Grammars: Aiding the Search for Relevant Web Information Marta Gatius
A Comparison of Neural Models for Word Ordering Eva Hasler, Felix Stahlberg, Marcus Tomalin, Adria de Gispert and Bill Byrne 208
Investigating the content and form of referring expressions in Mandarin: introducing the Mtuna corpus Kees van Deemter, Le Sun, Rint Sybesma, Xiao Li, Chen Bo and Muyun Yang

Realization of long sentences using chunking   Ewa Muszyńska and Ann Copestake   218
SaToS: Assessing and Summarising Terms of Services from German Webshops Daniel Braun, Elena Scepankova, Patrick Holl and Florian Matthes
Textually Summarising Incomplete Data   Stephanie Inglis, Ehud Reiter and Somayajulu Sripada   228
<i>Improving the generation of personalised descriptions</i> Thiago Castro Ferreira and Ivandré Paraboni
Analysing Data-To-Text Generation Benchmarks   Laura Perez-Beltrachini and Claire Gardent
<i>Linguistic Description of Complex Phenomena with the rLDCP R Package</i> Jose Alonso, Patricia Conde-Clemente and Gracian Trivino
A demo of FORGe: the Pompeu Fabra Open Rule-based Generator Simon Mille and Leo Wanner
<i>Referential Success of Set Referring Expressions with Fuzzy Properties</i> Nicolas Marin, Gustavo Rivas-Gervilla and Daniel Sanchez
Neural Response Generation for Customer Service based on Personality Traits Jonathan Herzig, Michal Shmueli-Scheuer, Tommy Sandbank and David Konopnicki 252
Neural Paraphrase Generation using Transfer Learning Florin Brad and Traian Rebedea

## **Conference Program**

Monday, September 4, 2017

- 8:30–9:00 Registration
- 9:00–11:00 Workshop: Linguistic Resources for Automatic Natural Language Generation (LiRA 2017)
- 9:00–11:00 Workshop: Recent Advances in RST and Related Formalisms (RST 2017)
- 9:00–11:00 Workshop: Explainable Computational Intelligence (XCI 2017)
- 11:00–11:30 Coffee Break
- 11:30–13:30 Workshop: Linguistic Resources for Automatic Natural Language Generation (LiRA 2017)
- 11:30–13:30 Workshop: Recent Advances in RST and Related Formalisms (RST 2017)
- 11:30–13:30 Workshop: Explainable Computational Intelligence (XCI 2017)
- 13:30-14:30 Lunch

Monday, September 4, 2017 (continued)

- 14:30–16:30 Workshop: Recent Advances in RST and Related Formalisms (RST 2017)
- 14:30–16:30 Workshop: Computational Creativity in Natural Language Generation (CC-NLG)
- 16:30–17:00 Coffee Break
- 17:00–19:00 Workshop: Computational Creativity in Natural Language Generation (CC-NLG 2017)
- Tuesday, September 5, 2017
- 8:30–9:00 Registration
- 9:00–9:30 Opening Ceremony
- 9:30–11:00 Oral Session 1 (Chair: Claire Gardent)
- 9:30–10:00 *Linguistic realisation as machine translation: Comparing different MT models for AMR-to-text generation* Thiago Castro Ferreira, Iacer Calixto, Sander Wubben and Emiel Krahmer
- 10:00–10:30 A Survey on Intelligent Poetry Generation: Languages, Features, Techniques, Reutilisation and Evaluation Hugo Gonçalo Oliveira
- 10:30–11:00 *Cross-linguistic differences and similarities in image descriptions* Emiel van Miltenburg, Desmond Elliott and Piek Vossen

#### Tuesday, September 5, 2017 (continued)

#### 11:00–11:30 Posters and Demos with Coffee (Part 1, Chair: Susana Bautista)

*Content Selection for Real-time Sports News Construction from Commentary Texts* Jin-ge Yao, Jianmin Zhang, Xiaojun Wan and Jianguo Xiao

*Improving the Naturalness and Expressivity of Language Generation for Spanish* Cristina Barros, Dimitra Gkatzia and Elena Lloret

What is the Role of Recurrent Neural Networks (RNNs) in an Image Caption Generator?

Marc Tanti, Albert Gatt and Kenneth Camilleri

*Exploring the Behavior of Classic REG Algorithms in the Description of Characters in 3D Images* 

Gonzalo Méndez, Raquel Hervás, Susana Bautista, Adrian Rabadan and Teresa Rodriguez

*Co-PoeTryMe: a Co-Creative Interface for the Composition of Poetry* Hugo Gonçalo Oliveira, Tiago Mendes and Ana Boavida

Refer-iTTS: A System for Referring in Spoken Installments to Objects in Real-World Images Sina Zarrieß, M. Soledad López Gambino and David Schlangen

#### 11:30–12:30 Invited Talk (Chair: Emiel Krahmer)

11:30–12:30 *Finding the "right" answers for customers* Frank Schilder

#### Tuesday, September 5, 2017 (continued)

#### 12:30–13:30 Oral Session 2 (Chair: Helmut Horacek)

- 12:30–13:00 *Referring Expression Generation under Uncertainty: Algorithm and Evaluation Framework* Tom Williams and Matthias Scheutz
- 13:00–13:30 *Natural Language Descriptions for Human Activities in Video Streams* Nouf Alharbi and Yoshihiko Gotoh

#### 13:30–15:00 Lunch

#### 15:00–16:00 Oral Session 3 (Chair: Amy Isard)

- 15:00–15:30 *PASS: A Dutch data-to-text system for soccer, targeted towards specific audiences* Chris van der Lee, Emiel Krahmer and Sander Wubben
- 15:30–16:00 *Evaluation of a Runyankore grammar engine for healthcare messages* Joan Byamugisha, C. Maria Keet and Brian DeRenzi

#### 16:00–16:30 Hackathon Presentation with Coffee (Chair: Yaji Sripada)

16:30–18:00 Special session on getting NLG into widespread real-world usage (Chair: Ehud Reiter)

Tuesday, September 5, 2017 (continued)

20:30–21:30 Welcome Reception

#### Wednesday, September 6, 2017

- 9:00–10:00 Invited Talk (Chair: Jose M. Alonso)
- 9:00–10:00 *Talking about the world with a distributed model* Gemma Boleda

#### 10:00–11:00 Special Session on Generation Challenges (Chair: Albert Gatt)

*The Code2Text Challenge: Text Generation in Source Libraries* Kyle Richardson, Sina Zarrieß and Jonas Kuhn

Shared Task Proposal: Multilingual Surface Realization Using Universal Dependency Trees Simon Mille, Bernd Bohnet, Leo Wanner and Anja Belz

*The WebNLG Challenge: Generating Text from RDF Data* Claire Gardent, Anastasia Shimorina, Shashi Narayan and Laura Perez-Beltrachini

#### 11:00–11:30 Posters and Demos with Coffee (Part 2, Chair: Simon Mille)

A Commercial Perspective on Reference Ehud Reiter

*Integrated sentence generation using charts* Alexander Koller and Nikos Engonopoulos

*Adapting SimpleNLG to Spanish* Alejandro Ramos Soto, Julio Janeiro Gallardo and Alberto Bugarín Diz

G-TUNA: a corpus of referring expressions in German, including duration information

David Howcroft, Jorrig Vogels and Vera Demberg

#### Wednesday, September 6, 2017 (continued)

*Toward an NLG System for Bantu languages: first steps with Runyankore (demo)* Joan Byamugisha, C. Maria Keet and Brian DeRenzi

A working, non-trivial, topically indifferent NLG System for 17 languages Robert Weißgraeber and Andreas Madsack

- 11:30–13:30 Oral Session 4 (Chair: Kees van Deemter)
- 11:30–12:00 *Generating titles for millions of browse pages on an e-Commerce site* Prashant Mathur, Nicola Ueffing and Gregor Leusch
- 12:00–12:30 *Towards Automatic Generation of Product Reviews from Aspect-Sentiment Scores* Hongyu Zang and Xiaojun Wan
- 12:30–13:00 *A model of suspense for narrative generation* Richard Doust and Paul Piwek
- 13:00–13:30 *Data-Driven News Generation for Automated Journalism* Leo Leppänen, Myriam Munezero, Mark Granroth-Wilding and Hannu Toivonen

#### 13:30-15:00 Lunch

#### Wednesday, September 6, 2017 (continued)

#### 15:00–16:00 Posters and Demos with Coffee (Part 3, Chair: Alejandro Ramos)

Data Augmentation for Visual Question Answering Kushal Kafle, Mohammed Yousefhussien and Christopher Kanan

Personalized Questions, Answers and Grammars: Aiding the Search for Relevant Web Information Marta Gatius

*A Comparison of Neural Models for Word Ordering* Eva Hasler, Felix Stahlberg, Marcus Tomalin, Adria de Gispert and Bill Byrne

Investigating the content and form of referring expressions in Mandarin: introducing the Mtuna corpus Kees van Deemter, Le Sun, Rint Sybesma, Xiao Li, Chen Bo and Muyun Yang

#### *Realization of long sentences using chunking* Ewa Muszyńska and Ann Copestake

*SaToS: Assessing and Summarising Terms of Services from German Webshops* Daniel Braun, Elena Scepankova, Patrick Holl and Florian Matthes

*Textually Summarising Incomplete Data* Stephanie Inglis, Ehud Reiter and Somayajulu Sripada

*Improving the generation of personalised descriptions* Thiago Castro Ferreira and Ivandré Paraboni

Analysing Data-To-Text Generation Benchmarks Laura Perez-Beltrachini and Claire Gardent

*Linguistic Description of Complex Phenomena with the rLDCP R Package* Jose Alonso, Patricia Conde-Clemente and Gracian Trivino

*A demo of FORGe: the Pompeu Fabra Open Rule-based Generator* Simon Mille and Leo Wanner

#### Wednesday, September 6, 2017 (continued)

#### 16:00–17:00 Oral Session 5 (Chair: Alberto Bugarín)

- 16:00–16:20 *Referential Success of Set Referring Expressions with Fuzzy Properties* Nicolas Marin, Gustavo Rivas-Gervilla and Daniel Sanchez
- 16:20–16:40 *Neural Response Generation for Customer Service based on Personality Traits* Jonathan Herzig, Michal Shmueli-Scheuer, Tommy Sandbank and David Konopnicki
- 16:40–17:00 *Neural Paraphrase Generation using Transfer Learning* Florin Brad and Traian Rebedea
- 18:00–19:30 INLG Group Photo and Guided Tour to the Old City
- 21:00–23:30 Gala Dinner and Awards Ceremony

Thursday, September 7, 2017

- 9:00–11:00 Invited Tutorial on Evaluating Natural Language Generation Systems, by Ehud Reiter (Part 1)
- 11:00–11:30 Coffee Break

Thursday, September 7, 2017 (continued)

- 11:30–13:30 Invited Tutorial on Evaluating Natural Language Generation Systems, by Ehud Reiter (Part 2)
- 13:30-14:30 Lunch
- 14:30–16:30 2nd SIGGEN Hackathon (Part 1)
- 16:30–17:00 Coffee Break
- 17:00–19:00 2nd SIGGEN Hackathon (Part 2)