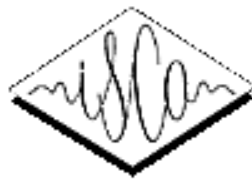
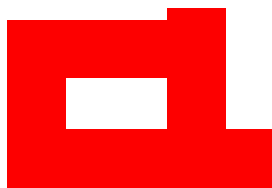


SIGDIAL 2014



**15th Annual Meeting of the  
Special Interest Group on Discourse and  
Dialogue**



**Proceedings of the Conference**

**18-20 June 2014  
Philadelphia, PA  
USA**

**In cooperation with:** Association for Computational Linguistics (ACL)  
International Speech Communication Association (ISCA)  
Association for the Advancement of Artificial Intelligence (AAAI)

**We thank our sponsors:**

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ISBN 978-1-941643-21-1

## Introduction

Welcome to the SIGDIAL 2014 Conference, the 15th Annual Meeting of the Special Interest Group on Discourse and Dialogue. The conference is held in Philadelphia, PA, USA on June 18-20th, jointly with the 8th International Natural Language Generation (INLG) conference and immediately preceding the 52nd Annual Meeting of the Association for Computational Linguistics (ACL).

SIGDIAL continues to serve as a publication venue for research that spans many aspects of discourse and dialogue. This year, the program included oral presentation and poster sessions on discourse, semantics, generation, situated and multi-modal dialogue, dialogue system control and evaluation, models of dialogue and spoken discourse and speech processing technology in dialogue. SIGDIAL 2014 also hosted a special session on the Dialogue State Tracking Challenge (DSTC), organized by Matt Henderson, Blaise Thomson and Jason Williams. The papers related to the challenge that appear in the proceedings were submitted and reviewed as regular SIGDIAL papers. Papers not accepted through the regular review process are not included in the proceedings, but were still invited to present posters in the special session. This is the first year SIGDIAL has issued a general call for special sessions.

We received 67 submissions—43 long papers, 20 short papers and 4 demo descriptions—from all around the world. All papers received 3 reviews. The members of the Program Committee did a superb job in reviewing the submitted papers. We thank them for their advice in selecting the accepted papers and for helping to maintain the high quality of the program. In line with the SIGDIAL tradition, our aim has been to create a balanced program that could accommodate as many favorably rated papers as possible.

Of the 43 long paper submissions: 13 were accepted as long papers for oral presentation, 9 were accepted as long papers for poster presentation. Of the 20 short paper submissions, 8 were accepted for poster presentation, for a total of 17 posters. There were 4 demonstration papers accepted. 9 papers were accepted for publication to appear in the DSTC Special Session (7 long and 2 short). This year's SIGDIAL conference runs 2.5 days as it did in 2013 with the special session being on the final half day.

We particularly thank the two keynote speakers, Lillian Lee (Cornell University) and Steve Young (Cambridge University) and for their contributions to research on discourse and dialogue systems.

We thank Svetlana Stoyanchev, Mentoring Chair for SIGDIAL 2014, for her dedicated work on coordinating the mentoring process. The goal of mentoring is to assist authors of papers that contain important ideas but lack clarity. Mentors work with the authors to improve English language usage or paper organization. This year, 9 of the accepted papers were mentored. We thank the Program Committee members who served as mentors: Timo Baumann, Giuseppe Di Fabbrizio, Jens Edlund, Annie Louis, Vincent Ng, Antoine Raux, Kristina Striegnitz, Nigel Ward and Jason Williams.

We extend special thanks to Keelan Evanini, the local arrangements chair, and his team Heather Blackman (administrative support) and Denise Maurer (event planning). SIGDIAL 2014 would not have been possible without Keelan and his team, who invested much effort in arranging the hotel venue and accommodation, handling registration, making banquet arrangements and handling numerous other preparations for the conference. We also thank the student volunteers for on-site assistance.

We thank Giuseppe Di Fabbrizio, Sponsorships Chair, for recruiting and liaising with our conference sponsors. The sponsorship program enables valuable aspects of the program, such as the invited speakers, conference reception and dinner. We gratefully acknowledge the support of our sponsors: Educational Testing Service, Microsoft Research, Amazon.com, Yahoo! Labs, Honda Research Institute, Linguistic Data Consortium, Mitsubishi Electric Research Laboratories, University of Pennsylvania Linguistics Department, AT&T Labs Research, PARLANCE project and SENSEI project. We also thank Priscilla

Rasmussen at the ACL for handling the financial aspects of sponsorship for SIGDIAL 2014.

We would also like to thank the INLG organizing committee, in particular Aoife Cahill and Margaret Mitchell, for the smooth running of the joint INLG/SIGDIAL session.

We also thank the SIGdial board, especially officers Kristiina Jokinen, Amanda Stent and Jason Williams, for their advice and support. Amanda's guidance and direct help in all aspects of organization have been most valuable. We thank Jason Williams and Barbara Di Eugenio for providing continuity and passing on advice derived from their experience as program chairs for SIGDIAL 2013. We appreciate Jason's prompt and patient replies to all our questions.

Finally, we thank all the authors of the papers in this volume, and all the conference participants for making this event such a great opportunity for new research in dialogue and discourse.

Kallirroi Georgila and Matthew Stone  
General Co-Chairs

Helen Hastie and Ani Nenkova  
Technical Program Co-Chairs



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Amita Misra, UC Santa Cruz, USA

**Invited Speakers:**

Professor Lillian Lee, Cornell University, USA  
Professor Steve Young, University of Cambridge, UK



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# Conference Program

## Wednesday 18th June 2014

- 9:00 Welcome and conference overview
- 9:15 *Keynote: Statistical Approaches to Open-domain Spoken Dialogue Systems*  
Steve Young
- 10:15 Break
- Oral Session 1: Situated Spoken Dialog Systems in Motion** Chair: Michael Johnston
- 10:45 *Crowdsourcing Street-level Geographic Information Using a Spoken Dialogue System*  
Raveesh Meena, Johan Boye, Gabriel Skantze and Joakim Gustafson
- 11:10 *Out-of-Domain Spoken Dialogs in the Car: A WoZ Study*  
Sven Reichel, Jasmin Sohn, Ute Ehrlich, André Berton and Michael Weber
- 11:35 *Situated Language Understanding at 25 Miles per Hour*  
Teruhisa Misu, Antoine Raux, Rakesh Gupta and Ian Lane
- 12:00 Lunch
- Oral Session 2: Adaptive Dialog Systems** Chair: Kai Yu
- 13:00 *Information Navigation System Based on POMDP that Tracks User Focus*  
Koichiro Yoshino and Tatsuya Kawahara
- 13:25 *Adapting to Personality Over Time: Examining the Effectiveness of Dialogue Policy Progressions in Task-Oriented Interaction*  
Alexandria Vail and Kristy Boyer
- 13:50 *Probabilistic Human-Computer Trust Handling*  
Florian Nothdurft, Felix Richter and Wolfgang Minker

**Wednesday 18th June 2014 (continued)**

14:15      **Poster Madness Session Chair:** Rebecca Passonneau

14:35      **Poster Session with Coffee**

*Learning Non-Cooperative Dialogue Behaviours*

Ioannis Efstathiou and Oliver Lemon

*Improving Classification-Based Natural Language Understanding with Non-Expert Annotation*

Fabrizio Morbini, Eric Forbell and Kenji Sagae

*User Modeling by Using Bag-of-Behaviors for Building a Dialog System Sensitive to the Interlocutor's Internal State*

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*InproTKs: A Toolkit for Incremental Situated Processing*

Casey Kennington, Spyros Kousidis and David Schlangen

*Back to the Blocks World: Learning New Actions through Situated Human-Robot Dialogue*

Lanbo She, Shaohua Yang, Yu Cheng, Yunyi Jia, Joyce Chai and Ning Xi

*An Easy Method to Make Dialogue Systems Incremental*

Hatim Khouzaimi, Romain Laroche and Fabrice Lefevre

*Free On-line Speech Recogniser Based on Kaldi ASR Toolkit Producing Word Posterior Lattices*

Ondřej Plátek and Filip Jurčiček



**Wednesday 18th June 2014 (continued)**

**Oral Session 3: Dialog Act Modelling** Chair: Wolfgang Minker

- 16:15 *Combining Task and Dialogue Streams in Unsupervised Dialogue Act Models*  
Aysu Ezen-Can and Kristy Boyer
- 16:40 *Dialogue Act Modeling for Non-Visual Web Access*  
Vikas Ashok, Yevgen Borodin, Svetlana Stoyanchev and IV Ramakrishnan
- 17:05 *Extractive Summarization and Dialogue Act Modeling on Email Threads: An Integrated Probabilistic Approach*  
Tatsuro Oya and Giuseppe Carenini
- 17:30 Announcements and business meeting
- 18:30 End of business meeting

**Thursday 19th June 2014**

- 9:00 *Keynote: Language Adaptation*  
Lillian Lee

- 10:00 Break

**Oral Session 4: Discourse** Chair: Diane Litman

- 10:20 *Addressing Class Imbalance for Improved Recognition of Implicit Discourse Relations*  
Junyi Jessy Li and Ani Nenkova
- 10:45 *The Role of Polarity in Inferring Acceptance and Rejection in Dialogue*  
Julian Schlöder and Raquel Fernández
- 11:10 *In-depth Exploitation of Noun and Verb Semantics to Identify Causation in Verb-Noun Pairs*  
Mehwish Riaz and Roxana Girju
- 11:35 *Identifying Narrative Clause Types in Personal Stories*  
Reid Swanson, Elahe Rahimtoroghi, Thomas Corcoran and Marilyn Walker

**Thursday 19th June 2014 (continued)**

12:00 Lunch and sponsor talks

13:50 **Poster and Demo Madness Session** Chair: Amy Isard

**INLG Joint Session Talks (see separate proceedings)** Chair: Kathy McCoy

14:15 *Crowdsourcing Language Generation Templates for Dialog Systems*  
Margaret Mitchell, Dan Bohus and Ece Kamar

14:40 *Generating Effective Referring Expressions Using Charts*  
Nikolaos Engonopoulos and Alexander Koller

15:05 *Modeling Blame to Avoid Positive Face Threats in Natural Language Generation*  
Gordon Briggs and Matthias Scheutz

15:30 **INLG Joint Session - Panel**

16:00 **Poster and Demonstration Session with Coffee**

*Evaluating a Spoken Dialogue System that Detects and Adapts to User Affective States*  
Diane Litman and Katherine Forbes-Riley

*Initiative Taking in Negotiation*  
Elnaz Nouri and David Traum

*Knowledge Acquisition Strategies for Goal-Oriented Dialog Systems*  
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**Thursday 19th June 2014 (continued)**

*SAWDUST: A Semi-Automated Wizard Dialogue Utterance Selection Tool for Domain-Independent Large-Domain Dialogue*

Sudeep Gandhe and David Traum

*A Demonstration of Dialogue Processing in SimSensei Kiosk*

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*The PARLANCE Mobile Application for Interactive Search in English and Mandarin*

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18:00 **Poster session ends**

19:00 **Banquet**

**Friday 20th June 2014**

**DSTC Special Session Chair:** Alan Black

8:45 *The Second Dialog State Tracking Challenge*

Matthew Henderson, Blaise Thomson and Jason D Williams

9:07 *Optimizing Generative Dialog State Tracker via Cascading Gradient Descent*

Byung-Jun Lee, Woosang Lim, Daejoong Kim and Kee-Eung Kim

9:23 *Web-style Ranking and SLU combination for dialog state tracking*

Jason D Williams

9:39 *Word-Based Dialog State Tracking with Recurrent Neural Networks*

Matthew Henderson, Blaise Thomson and Steve Young

9:55 *Comparative Error Analysis of Dialog State Tracking*

Ronnie Smith

10:15 *Extrinsic Evaluation of Dialog State Tracking and Predictive Metrics for Dialog Policy Optimization*

Sungjin Lee

**Friday 20th June 2014 (continued)**

10:35           **Poster Session with coffee**

*The SJTU System for Dialog State Tracking Challenge 2*

Kai Sun, Lu Chen, Su Zhu and Kai Yu

*Markovian Discriminative Modeling for Dialog State Tracking*

Hang Ren, Weiqun Xu and Yonghong Yan

*Sequential Labeling for Tracking Dynamic Dialog States*

Seokhwan Kim and Rafael E. Banchs

*Dialog State Tracking by Decomposing the States*

Wencan Luo and Diane Litman

12:00           Best paper award ceremony and closing