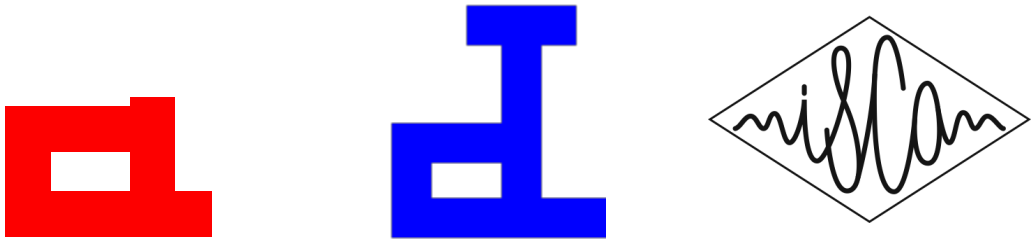
ACL-08: HLT

Proceedings of the 9th SIGdial Workshop on Discourse and Dialogue

Edited by David Schlangen and Beth Ann Hockey



19–20 June 2008
Ohio State University
Columbus, Ohio, USA

Production and Manufacturing by
Omnipress Inc.
2600 Anderson Street
Madison, WI 53707
USA

We thank our sponsors:

Microsoft Research

JOHN BENJAMINS PUBLISHING COMPANY

SemanticEdge
FIRST CHOICE

Powerset
NATURAL LANGUAGE SEARCH

©2008 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 978-1-932432-17-6

Introduction

We are pleased to present in this volume, the Proceedings of the 9th SIGdial Workshop on Discourse and Dialogue. These proceedings could not have been produced without the assistance of this year's excellent program committee. The quality of the collection is a result of their efforts and we are indebted to them for donating their time and expertise. 19 of the 46 submissions were accepted as long papers and another 10 were accepted as short papers. This selection of papers follows the SIGdial tradition of providing a venue for work on theory, implemented systems, developed work and new approaches. The topics covered include generation for dialogue systems, dialogue system evaluation, opinions, persuasion, multi-party dialogue, probabilistic methods for dialogue, grounding and the use of dialogue features for improving speech processing. We are optimistic that the breadth and quality of the selected papers will contribute to a lively and interesting workshop event and will prove a valuable resource for the SIGdial readership.

There are many to thank for their assistance with the organization of the 2008 SIGdial event; we mention a few of them here. We would like to thank ACL for providing workshop support, and Priscilla Rasmussen for handling the financial transactions and providing us with valuable information about the mysteries of matters budgetary. The SIGdial Board was very supportive and provided sage advice to us on a number of questions that arose in the course of organizing the event. David Traum gave us extra assistance on several issues and was very responsive to our numerous questions. Additional thanks go to Harry Bunt, Tim Paek and Livia Polyani for helping us secure sponsorship, to Crystal Nakatsu for giving us excellent advice on potential reception locations, and to the SIGdial webmaster, Torben Madsen, for putting up the website.

We also thank Prof. Julia Hirschberg of Columbia University for giving the 2008 SIGdial keynote address on "Lexical, Acoustic/Prosodic, and Discourse Entrainment in Spoken Dialogue Systems".

And finally, thank you, the SIGdial audience, for your continued support in making SIGdial a premier venue for work in Discourse and Dialogue.

Beth Ann Hockey & David Schlangen
SIGdial 2008 Co-Chairs

Organizers:

Beth Ann Hockey, UC Santa Cruz (USA)
David Schlangen, University of Potsdam (Germany)

Program Committee:

Jan Alexandersson, DFKI GmbH (Germany)
Masahiro Araki, Kyoto Institute of Technology (Japan)
Srinivas Bangalore, ATT Research, (USA)
Robbert-Jan Beun, Universiteit Utrecht (Netherlands)
Nate Blaylock, IHMC (USA)
Dan Bohus, Microsoft Research (USA)
Johan Bos, La Sapienza (Italy)
Pierrette Bouillon, University of Geneva (Switzerland)
Johan Boye, Telia Research (Sweden)
Harry Bunt, Tilburg University (Netherlands)
Donna Byron, Ohio State University (USA)
Sandra Carberry, University of Delaware (USA)
Rolf Carlson, KTH (Sweden)
Justine Cassell, Northwestern University (USA)
Christine Doran, MITRE (USA)
Laila Dybkjaer, University of Southern Denmark (Denmark)
Myroslava Dzikovska, University of Edinburgh (UK)
Jens Edlund, KTH (Sweden)
Stephanie Elzer, Millersville University (USA)
Raquel Fernández, Stanford (USA)
Mary Ellen Foster, Technical University Munich (Germany)
Reva Freedman, Northern Illinois University (USA)
Kallirroi Georgila, University of Edinburgh (UK)
Jonathan Ginzburg, King's College (UK)
Genevieve Gorrell, Sheffield University (UK)
Nancy Green, University of North Carolina at Greensboro (USA)
Alexander Gruenstein, MIT (USA)
Joakim Gustafson, Teliasonera Sweden (Sweden)
Patrick Healey, Queen Mary University London (UK)
Mattias Heldner, KTH (Sweden)
Kristiina Jokinen, University of Helsinki (Finland)
Arne Jonsson, University of Linkoping (Sweden)
Pamela Jordan, University of Pittsburgh (USA)
Simon Keizer, Cambridge University (UK)
Alistair Knott, Otago University (NewZealand)
Jörn Kreutel, Semantic Edge and University of Potsdam (Germany)
Geert-Jan Kruijff, DFKI (Germany)
Staffan Larsson, Göteborg University (Sweden)
Alex Lascarides, University of Edinburgh (UK)
Lin-Shan Lee, National Taiwan University (Taiwan)
Oliver Lemon, University of Edinburgh (UK)
Piroska Lendvai, Tilburg University (The Netherlands)
Diane Litman, University of Pittsburgh (USA)
Ramón López-Cózar, University of Granada (Spain)
Colin Matheson, University of Edinburgh (UK)
Michael McTear, University of Ulster (UK)

Wolfgang Minker, University of Ulm (Germany)
Sebastian Möller, Deutsche Telekom Labs and Technical University Berlin (Germany)
Mikio Nakano, Honda Research Institute (Japan)
Yukiko Nakano, Tokyo University of Agriculture and Technology (Japan)
Tim Paek, Microsoft Research (USA)
Patrick Paroubek, LIMSI-CNRS (France)
Norbert Pfleger, DFKI GmbH (Germany)
Roberto Pieraccini, Speech Cycle (USA)
Paul Piwek, Open University (UK)
Livia Polanyi, Powerset (USA)
Andrei Popescu-Belis, IDIAP Research Institute (Switzerland)
Matt Purver, Stanford (USA)
Manny Rayner, University of Geneva (Switzerland)
Norbert Reithinger, DFKI GmbH (Germany)
Laurent Romary, LORIA (France)
Antonio Roque, USC ICT (USA)
Alex Rudnicky, CMU (USA)
Yoshinori Sagisaka, Waseda University (Japan)
Stephanie Seneff, MIT (USA)
Gabriel Skantze, KTH (Sweden)
Ronnie Smith, East Carolina University (USA)
Claudia Soria, CNR (Italy)
Manfred Stede, University of Potsdam (Germany)
Amanda Stent, Stony Brook University (USA)
Matthew Stone, Rutgers University (USA)
Thora Tenbrink, University of Bremen (Germany)
Stefanie Tomko, Microsoft Corp (USA)
David Traum, USC/ICT (USA)
Nigel Ward, University of Texas at El Paso (USA)
Art Ward, University of Pittsburgh (USA)
Janyce Wiebe, University of Pittsburgh (USA)
Jason Williams, AT&T Labs (USA)
Steve Young, Cambridge University (UK)
Ingrid Zukerman, Monash University (Australia)

Additional Reviewers:

Paul Crook, University of Edinburgh (UK)
Verena Rieser, University of Edinburgh (UK)
Niels Kasch, East Carolina University (USA)

Invited Speaker:

Julia Hirschberg, Columbia University (USA)

Table of Contents

Optimizing Endpointing Thresholds using Dialogue Features in a Spoken Dialogue System
Antoine Raux and Maxine Eskenazi 1

Response-Based Confidence Annotation for Spoken Dialogue Systems
Alexander Gruenstein 11

Learning N-Best Correction Models from Implicit User Feedback in a Multi-Modal Local Search Application
Dan Bohus, Xiao Li, Patrick Nguyen and Geoffrey Zweig 21

Agreement and Disputes in Dialogue
Alex Lascarides and Nicholas Asher 29

Reactive Redundancy and Listener Comprehension in Direction-Giving
Rachel Baker, Alastair Gill and Justine Cassell 37

Semantic negotiation in dialogue: the mechanisms of alignment
Gregory Mills and Pat Healey 46

Degrees of Grounding Based on Evidence of Understanding
Antonio Roque and David Traum 54

Rapidly Deploying Grammar-Based Speech Applications with Active Learning and Back-off Grammars
Tim Paek, Sudeep Gandhe and Max Chickering 64

Persistent Information State in a Data-Centric Architecture
Sebastian Varges, Giuseppe Riccardi and Silvia Quarteroni 68

Speaking without knowing what to say... or when to end
Anna Hjalmarsson 72

Learning Contrastive Connectives in Sentence Realization Ranking
Crystal Nakatsu 76

What Are Meeting Summaries? An Analysis of Human Extractive Summaries in Meeting Corpus
Fei Liu and Yang Liu 80

A Simple Method for Resolution of Definite Reference in a Shared Visual Context
Alexander Siebert and David Schlangen 84

A Framework for Building Conversational Agents Based on a Multi-Expert Model
Mikio Nakano, Kotaro Funakoshi, Yuji Hasegawa and Hiroshi Tsujino 88

From GEMINI to DiaGen: Improving Development of Speech Dialogues for Embedded Systems
Stefan Hamerich 92

Quantifying Ellipsis in Dialogue: an index of mutual understanding
Marcus Colman, Arash Eshghi and Pat Healey 96

Implicit Proposal Filtering in Multi-Party Consensus-Building Conversations
Yasuhiro Katagiri, Yosuke Matsusaka, Yasuharu Den, Mika Enomoto, Masato Ishizaki and Katsuya Takanashi 100

Optimal Dialog in Consumer-Rating Systems using POMDP Framework
Zhifei Li, Patrick Nguyen and Geoffrey Zweig 104

Training and Evaluation of the HIS POMDP Dialogue System in Noise
Milica Gašić, Simon Keizer, Francois Mairesse, Jost Schatzmann, Blaise Thomson, Kai Yu and Steve Young 112

A Frame-Based Probabilistic Framework for Spoken Dialog Management Using Dialog Examples
Kyungduk Kim, Cheongjae Lee, Sangkeun Jung and Gary Geunbae Lee 120

Speaking More Like You: Lexical, Acoustic/Prosodic, and Discourse Entrainment in Spoken Dialogue Systems
Julia Hirschberg 128

Discourse Level Opinion Relations: An Annotation Study
Swapna Somasundaran, Josef Ruppenhofer and Janyce Wiebe 129

Argumentative Human Computer Dialogue for Automated Persuasion
Pierre Andrews, Suresh Manandhar and Marco De Boni 138

Modeling Vocal Interaction for Text-Independent Participant Characterization in Multi-Party Conversation
Kornel Laskowski, Mari Ostendorf and Tanja Schultz 148

Modelling and Detecting Decisions in Multi-party Dialogue
Raquel Fernández, Matthew Frampton, Patrick Ehlen, Matthew Purver and Stanley Peters . . . 156

User Simulation as Testing for Spoken Dialog Systems
Hua Ai and Fuliang Weng 164

Evaluation Understudy for Dialogue Coherence Models
Sudeep Gandhe and David Traum 172

A Framework for Model-based Evaluation of Spoken Dialog Systems
Sebastian Möller and Nigel Ward 182

The Effect of Dialogue System Output Style Variation on Users' Evaluation Judgments and Input Style
Ivana Kruijff-Korbayova and Olga Kukina 190

Making Grammar-Based Generation Easier to Deploy in Dialogue Systems
David DeVault, David Traum and Ron Artstein 198

Conference Program

Thursday, June 19, 2008

9:00–9:15 Opening Remarks

Session 1: Dialogue Features and Speech Processing

9:15–9:40 *Optimizing Endpointing Thresholds using Dialogue Features in a Spoken Dialogue System*
Antoine Raux and Maxine Eskenazi

9:40–10:05 *Response-Based Confidence Annotation for Spoken Dialogue Systems*
Alexander Gruenstein

10:05–10:30 *Learning N-Best Correction Models from Implicit User Feedback in a Multi-Modal Local Search Application*
Dan Bohus, Xiao Li, Patrick Nguyen and Geoffrey Zweig

10:30–11:00 Coffee Break

Session 2: Grounding in Dialogue

11:00–11:25 *Agreement and Disputes in Dialogue*
Alex Lascarides and Nicholas Asher

11:25–11:50 *Reactive Redundancy and Listener Comprehension in Direction-Giving*
Rachel Baker, Alastair Gill and Justine Cassell

11:50–12:15 *Semantic negotiation in dialogue: the mechanisms of alignment*
Gregory Mills and Pat Healey

12:15–12:40 *Degrees of Grounding Based on Evidence of Understanding*
Antonio Roque and David Traum

12:40–2:40 Lunch and Poster Session

Thursday, June 19, 2008 (continued)

Poster Session

Rapidly Deploying Grammar-Based Speech Applications with Active Learning and Back-off Grammars
Tim Paek, Sudeep Gandhe and Max Chickering

Persistent Information State in a Data-Centric Architecture
Sebastian Varges, Giuseppe Riccardi and Silvia Quarteroni

Speaking without knowing what to say... or when to end
Anna Hjalmarsson

Learning Contrastive Connectives in Sentence Realization Ranking
Crystal Nakatsu

What Are Meeting Summaries? An Analysis of Human Extractive Summaries in Meeting Corpus
Fei Liu and Yang Liu

A Simple Method for Resolution of Definite Reference in a Shared Visual Context
Alexander Siebert and David Schlangen

A Framework for Building Conversational Agents Based on a Multi-Expert Model
Mikio Nakano, Kotaro Funakoshi, Yuji Hasegawa and Hiroshi Tsujino

From GEMINI to DiaGen: Improving Development of Speech Dialogues for Embedded Systems
Stefan Hamerich

Quantifying Ellipsis in Dialogue: an index of mutual understanding
Marcus Colman, Arash Eshghi and Pat Healey

Implicit Proposal Filtering in Multi-Party Consensus-Building Conversations
Yasuhiro Katagiri, Yosuke Matsusaka, Yasuharu Den, Mika Enomoto, Masato Ishizaki and Katsuya Takanashi

Thursday, June 19, 2008 (continued)

Session 3: Probabilistic Methods

2:40–3:05 *Optimal Dialog in Consumer-Rating Systems using POMDP Framework*
Zhifei Li, Patrick Nguyen and Geoffrey Zweig

3:05–3:30 *Training and Evaluation of the HIS POMDP Dialogue System in Noise*
Milica Gašić, Simon Keizer, Francois Mairesse, Jost Schatzmann, Blaise Thomson, Kai Yu and Steve Young

3:30–4:00 Coffee Break

4:00–4:25 *A Frame-Based Probabilistic Framework for Spoken Dialog Management Using Dialog Examples*
Kyungduk Kim, Cheongjae Lee, Sangkeun Jung and Gary Geunbae Lee

4:25–5:25 SIGdial business meeting

5:25 End of first day

7:00 Reception, Palm House at Franklin Park Conservatory

Friday, June 20, 2008

9:30–10:30 Invited Talk

Speaking More Like You: Lexical, Acoustic/Prosodic, and Discourse Entrainment in Spoken Dialogue Systems
Julia Hirschberg

10:30–11:00 Coffee Break

Session 4: Opinions, Persuasion, and Multi-Party Dialogue

11:00–11:25 *Discourse Level Opinion Relations: An Annotation Study*
Swapna Somasundaran, Josef Ruppenhofer and Janyce Wiebe

11:25–11:50 *Argumentative Human Computer Dialogue for Automated Persuasion*
Pierre Andrews, Suresh Manandhar and Marco De Boni

Friday, June 20, 2008 (continued)

11:50–12:15 *Modeling Vocal Interaction for Text-Independent Participant Characterization in Multi-Party Conversation*
Kornel Laskowski, Mari Ostendorf and Tanja Schultz

12:15–12:45 *Modelling and Detecting Decisions in Multi-party Dialogue*
Raquel Fernández, Matthew Frampton, Patrick Ehlen, Matthew Purver and Stanley Peters

12:45–2:15 Lunch

Session 5: Evaluation

2:15–2:40 *User Simulation as Testing for Spoken Dialog Systems*
Hua Ai and Fuliang Weng

2:40–3:05 *Evaluation Understudy for Dialogue Coherence Models*
Sudeep Gandhe and David Traum

3:05–3:30 *A Framework for Model-based Evaluation of Spoken Dialog Systems*
Sebastian Möller and Nigel Ward

3:30–4:00 Coffee Break

Session 6: Generation

4:00–4:25 *The Effect of Dialogue System Output Style Variation on Users' Evaluation Judgments and Input Style*
Ivana Kruijff-Korbayova and Olga Kukina

4:25–4:50 *Making Grammar-Based Generation Easier to Deploy in Dialogue Systems*
David DeVault, David Traum and Ron Artstein

4:50–5:00 Closing Remarks

5:00 End of SIGdial 2008