

5th SIGdial Workshop on Discourse and Dialogue

Proceedings of the Workshop

**April 30 - May 1, 2004
Cambridge, Massachusetts, USA**

5th SIGdial Workshop on Discourse and Dialogue

Proceedings of the Workshop

**Edited by
Michael Strube and Candy Sidner**

**April 30 - May 1, 2004
Cambridge, Massachusetts, USA**

Published by the Association for Computational Linguistics

<http://www.aclweb.org>

SPONSORS:

Klaus Tschira Foundation gGmbH, Heidelberg, Germany

Microsoft Research, Redmond/WA, USA

IBM Research, Yorktown Heights/NY, USA

Mitsubishi Electric Research Labs (MERL), Cambridge/MA, USA

©2004 The Association for Computational Linguistics

ISBN: 1-932432-27-2

Order additional copies from:

Association for Computational Linguistics (ACL)

3 Landmark Center

East Stroudsburg, PA 18301

USA

Phone: +1-570-476-8006

Fax: +1-570-476-0860

e-mail: acl@aclweb.org

<http://www.aclweb.org>

PREFACE

We welcome you to SIGdial '04, the fifth annual workshop of SIGdial, the Special Interest Group in Discourse and Dialogue, held at the Massachusetts Institute of Technology. This year's twenty-seven papers span the interests of SIGdial members and include topics in discourse and dialogue generation, tutorial dialogues, annotating corpora, spoken and multimodal dialogue systems, dialogue act tagging, discourse structure and topics in anaphora. We received 41 submissions, 30 long papers and eleven short ones. Thirteen long and seven short papers were accepted, nine long papers were accepted as short ones. Three papers were withdrawn during the review and acceptance process. The workshop is organized by SIGdial, which is sponsored jointly by the Association for Computational Linguistics (ACL) and the International Speech Communication Association (ISCA).

Our guest speaker, Professor Justine Cassell from Northwestern University in Chicago, Illinois, USA, will be addressing issues in multi-media embodied conversational characters with her talk *Dialogue Systems that can Handle Face-to-Face Joint Reference to Actions in Space*.

A two-day workshop cannot take place without the collaboration and efforts of many people. We thank the members of the program committee for their serious and thoughtful reviewing for the papers for the workshop; Tomasz Marciniak, EML Research, for creating and maintaining the SIGdial '04 website together with online submission and reviewing facilities; Jim Glass and Marcia Davidson, MIT, for sponsoring SIGdial '04 at MIT and for much of the local arrangements planning; our student volunteers for work during the workshop; the authors of the papers and presenters of demos for reporting on new and exciting work; David Traum for budget planning and general advice; Laila Dybkjær for financial advice, the HLT/NAACL conference organizers for a myriad of assistance; Priscilla Rasmussen of the ACL office for workshop registration and extensive help in planning this meeting.

We have been fortunate to have the generous support of several institutions for SIGdial '04 and we wish to thank them for their contribution:

Klaus Tschira Foundation gGmbH
Microsoft Research
IBM Research
Mitsubishi Electric Research Labs

We hope these papers and the workshop website (<http://sigdial04.eml-research.de>) will provide a record of some of the discussion and activity of our two days in Cambridge, Massachusetts.

Candy Sidner and Michael Strube
SIGdial '04 Co-chairs
March 2004

PROGRAM COMMITTEE:

Michael Strube, EML Research gGmbH, Germany, Co-Chair
Candy Sidner, Mitsubishi Electric Research Labs, USA, Co-Chair

Jan Alexandersson, DFKI, Germany
Johan Bos, University of Edinburgh, UK
Sandra Carberry, University of Delaware, USA
Jean Carletta, University of Edinburgh, UK
Justine Cassell, Northwestern University, USA
Jennifer Chu-Carroll, IBM Research, USA
Mark Core, University of Edinburgh, UK
Deborah Dahl, Conversational Technologies, USA
Renato De Mori, Université de Avignon
Sadaoki Furui, Tokyo Institute of Technology, Japan
Sanda Harabagiu, University of Texas at Dallas, USA
Beth Ann Hockey, RIACS, USA
Amy Isard, University of Edinburgh, UK
Masato Ishizaki, University of Tokyo, Japan
Michael Johnston, AT&T Research, USA
Pamela Jordan, University of Pittsburgh, USA
Andrew Kehler, University of California San Diego, USA
Staffan Larsson, University of Gothenburg, Sweden
Susann Luperfoy, Stottler-Henke Associates, USA
Erwin Marsi, University of Tilburg, The Netherlands
Tim Paek, Microsoft Research, USA
Catherine Pelachaud, Université de Paris 8, France
Massimo Poesio, University of Essex, UK
Matthew Purver, Kings College London, UK
Alex Rudnicky, Carnegie Mellon University, USA
David Schlangen, University of Potsdam, Germany
Elizabeth Shriberg, SRI and ICSI, USA
Ronnie Smith, East Carolina University, USA
Manfred Stede, University of Potsdam, Germany
Oliviero Stock, ITC-IRST, Italy
Richmond Thomason, University of Michigan, USA
Syun Tutiya, Chiba University, Japan
Renata Vieira, UNISINOS, Brazil
Bonnie Webber, University of Edinburgh, USA
Janyce Wiebe, University of Pittsburgh, USA
Massimo Zancanaro, ITC-IRST, Italy
Michelle Zhou, IBM Research, USA

WORKSHOP WEBSITE:

<http://sigdial04.eml-research.de>

Table of Contents

| | |
|--|----|
| <i>Usability and Acceptability Studies of Conversational Virtual Human Technology</i> Curry Guinn, Robert Hubal, Geoffrey Frank, Henry Schwetzke, James Zimmer, Sarah Backus, Robin Deterding, Michael Link, Polly Armsby, Rachel Caspar, Laura Flicker, Wendy Visscher, Amanda Meehan and Harvey Zelon | 1 |
| <i>Stochastic Language Generation in a Dialogue System: Toward a Domain Independent Generator</i> Nathanael Chambers and James Allen | 9 |
| <i>Conversational Dialogue Management in the FASiL project</i> Kerry Robinson, David Horowitz, Emilio Bobadilla, Mark Lascelles and Ana Suarez | 19 |
| <i>The NICE Fairy-tale Game System</i> Joakim Gustafson, Linda Bell, Johan Boye, Anders Lindström and Mats Wirén | 23 |
| <i>Combining Acoustic Confidences and Pragmatic Plausibility for Classifying Spoken Chess Move Instructions</i> Malte Gabsdil | 27 |
| <i>Semi-Automatic Generation of Dialogue Applications in the GEMINI Project</i> Stefan Hamerich, Volker Schubert, Volker Schless, Ricardo de Córdoba, José M. Pardo, Luis F. d'Haro, Basilis Kladis, Otilia Kocsis and Stefan Igel | 31 |
| <i>A View on Dialogue Move Taxonomies for Tutorial Dialogues</i> Dimitra Tsovaltzi and Elena Karagjosova | 35 |
| <i>Other-Initiated Self-Repairs in Estonian Information Dialogues: Solving Communication Problems in Cooperation</i> Olga Gerassimenko, Tiit Hennoste, Mare Koit and Andriela Rääbis | 39 |
| <i>But What Do They Mean? An Exploration Into the Range of Cross-Turn Expectations Denied by "But"</i> Kavita Thomas | 43 |
| <i>Anaphora Resolution in Multi-Person Dialogues</i> Prateek Jain, Manav Ratan Mital, Sumit Kumar, Amitabha Mukerjee and Achla M. Raina | 47 |
| <i>The Importance of Discourse Context for Statistical Natural Language Generation</i> Cassandre Cresswell and Elsi Kaiser | 51 |
| <i>Resolution of Lexical Ambiguities in Spoken Dialogue Systems</i> Berenike Loos and Robert Porzel | 55 |
| <i>Towards Automatic Identification of Discourse Markers in Dialogs: The Case of Like</i> Sandrine Zufferey and Andrei Popescu-Belis | 63 |
| <i>Bootstrapping Spoken Dialog Systems with Data Reuse</i> Guisepppe Di Fabbrizio, Gokhan Tur and Dilek Hakkani-Tür | 72 |
| <i>Speech Graffiti Habitability: What Do Users Really Say?</i> Stefanie Tomko and Roni Rosenfeld | 81 |
| <i>Acknowledgment Use with Synthesized and Recorded Prompts</i> Karen Ward, Tasha Hollingsed and Javier A. Aldaz Salmon | 85 |
| <i>Towards Automatic Addressee Identification in Multi-party Dialogues</i> Natasa Jovanovic and Rieks op den Akker | 89 |
| <i>Prosodic Cues to Discourse Segment Boundaries in Human-Computer Dialogue</i> Gina-Anne Levow | 93 |

| | |
|---|-----|
| <i>The ICSI Meeting Recorder Dialog Act (MRDA) Corpus</i> Elizabeth Shriberg, Raj Dhillon, Sonali Bhagat, Jeremy Ang and Hannah Carvey | 97 |
| <i>Dialogue Systems that Can Handle Face-to-Face Joint Reference to Actions in Space</i> Justine Cassell | 101 |
| <i>On the Use of Confidence for Statistical Decision in Dialogue Strategies</i> Christian Raymond, Frédéric Béchet, Renato De Mori and Géraldine Damnati | 102 |
| <i>A Rule Based Approach to Discourse Parsing</i> Livia Polanyi, Chris Culy, Martin van den Berg, Gian Lorenzo Thione and David Ahn | 108 |
| <i>Unifying Annotated Discourse Hierarchies to Create a Gold Standard</i> Marco Carbone, Ya'akov Gal, Stuart Shieber and Barbara Grosz | 118 |
| <i>Discourse Dependency Structures as Constrained DAGs</i> Laurence Danlos | 127 |
| <i>Causes and Strategies for Requesting Clarification in Dialogue</i> David Schlangen | 136 |
| <i>Annotating Student Emotional States in Spoken Tutoring Dialogues</i> Diane J. Litman and Kate Forbes-Riley | 144 |
| <i>The MATE/GNOME Proposals for Anaphoric Annotation, Revisited</i> Massimo Poesio | 154 |
| <i>Multi-level Dialogue Act Tags</i> Alexander Clark and Andrei Popescu-Belis | 163 |

SIGdial '04 PROGRAM

Friday, April 30, 2004

8:00-9:15 Registration

9:15-9:25 Opening

Long Papers

9:25-9:55 *Usability and Acceptability Studies of Conversational Virtual Human Technology*
Curry Guinn, Robert Hubal, Geoffrey Frank, Henry Schwetzke, James Zimmer, Sarah Backus, Robin Deterding, Michael Link, Polly Armsby, Rachel Caspar, Laura Flicker, Wendy Visscher, Amanda Meehan and Harvey Zelon

9:55-10:25 *Stochastic Language Generation in a Dialogue System: Toward a Domain Independent Generator*
Nathanael Chambers and James Allen

10:30-11:10 Short Presentations I

Conversational Dialogue Management in the FASiL project
Kerry Robinson, David Horowitz, Emilio Bobadilla, Mark Lascelles and Ana Suarez

The NICE Fairy-tale Game System
Joakim Gustafson, Linda Bell, Johan Boye, Anders Lindström and Mats Wirén

Combining Acoustic Confidences and Pragmatic Plausibility for Classifying Spoken Chess Move Instructions
Malte Gabsdil

Semi-Automatic Generation of Dialogue Applications in the GEMINI Project
Stefan Hamerich, Volker Schubert, Volker Schless, Ricardo de Córdoba, José M. Pardo, Luis F. d'Haro, Basilis Kladis, Otilia Kocsis and Stefan Igel

11:10-11:40 Coffee Break

11:40-12:30 Short Presentations II

A View on Dialogue Move Taxonomies for Tutorial Dialogues
Dimitra Tsovaltzi and Elena Karagjosova

Other-Initiated Self-Repairs in Estonian Information Dialogues: Solving Communication Problems in Cooperation

Olga Gerassimenko, Tiit Hennoste, Mare Koit and Andriela Rääbis

But What Do They Mean? An Exploration Into the Range of Cross-Turn Expectations Denied by "But"
Kavita Thomas

Anaphora Resolution in Multi-Person Dialogues
Prateek Jain, Manav Ratan Mital, Sumit Kumar, Amitabha Mukerjee and Achla M. Raina

The Importance of Discourse Context for Statistical Natural Language Generation
Cassandre Cresswell and Elsi Kaiser

12:30-2:15 Lunch Break

Long Papers

2:15-2:45 *Resolution of Lexical Ambiguities in Spoken Dialogue Systems*
Berenike Loos and Robert Porzel

2:45-3:15 *Towards Automatic Identification of Discourse Markers in Dialogs: The Case of Like*
Sandrine Zufferey and Andrei Popescu-Belis

3:15-3:45 *Bootstrapping Spoken Dialog Systems with Data Reuse*
Guiseppe Di Fabbrizio, Gokhan Tur and Dilek Hakkani-Tür

- 3:45-4:15 Coffee Break
- 4:15-5:05 **Short Presentations III**
- Speech Graffiti Habitability: What Do Users Really Say?*
Stefanie Tomko and Roni Rosenfeld
- Acknowledgment Use with Synthesized and Recorded Prompts*
Karen Ward, Tasha Hollingsed and Javier A. Aldaz Salmon
- Towards Automatic Addressee Identification in Multi-party Dialogues*
Natasa Jovanovic and Rieks op den Akker
- Prosodic Cues to Discourse Segment Boundaries in Human-Computer Dialogue*
Gina-Anne Levow
- The ICSI Meeting Recorder Dialog Act (MRDA) Corpus*
Elizabeth Shriberg, Raj Dhillon, Sonali Bhagat, Jeremy Ang and Hannah Carvey
- 6:00-9:00 **Reception with Poster/Demo Session**

Saturday, May 1, 2004

- 9:00 -10:15 **Invited Talk:** *Dialogue Systems that Can Handle Face-to-Face Joint Reference to Actions in Space*
Prof. Justine Cassell, Northwestern University, USA
- Long Paper**
- 10:15-10:45 *On the Use of Confidence for Statistical Decision in Dialogue Strategies*
Christian Raymond, Frédéric Béchet, Renato De Mori and Géraldine Damnati
- 10:45-11:15 Coffee Break
- 11:15-12:15 **SIGdial Business Meeting**
- 12:15-2:00 Lunch Break
- Long Papers**
- 2:00-2:30 *A Rule Based Approach to Discourse Parsing*
Livia Polanyi, Chris Culy, Martin van den Berg, Gian Lorenzo Thione and David Ahn
- 2:30-3:00 *Unifying Annotated Discourse Hierarchies to Create a Gold Standard*
Marco Carbone, Ya'akov Gal, Stuart Shieber and Barbara Grosz
- 3:00-3:30 *Discourse Dependency Structures as Constrained DAGs*
Laurence Danlos
- 3:30-4:00 *Causes and Strategies for Requesting Clarification in Dialogue*
David Schlangen
- 4:00-4:30 Coffee Break
- Long Papers**
- 4:30-5:00 *Annotating Student Emotional States in Spoken Tutoring Dialogues*
Diane J. Litman and Kate Forbes-Riley
- 5:00-5:30 *The MATE/GNOME Proposals for Anaphoric Annotation, Revisited*
Massimo Poesio
- 5:30-6:00 *Multi-level Dialogue Act Tags*
Alexander Clark and Andrei Popescu-Belis

Author Index

| | | | |
|-------------------------|-----|-----------------------|---------|
| Ahn, David | 108 | Levow, Gina-Anne | 93 |
| Aldaz Salmon, Javier A. | 85 | Lindström, Anders | 23 |
| Allen, James | 9 | Link, Michael | 1 |
| Ang, Jeremy | 97 | Litman, Diane J. | 144 |
| Armsby, Polly | 1 | Loos, Berenike | 55 |
| Backus, Sarah | 1 | Meehan, Amanda | 1 |
| Béchet, Frédéric | 102 | Mital, Manav Ratan | 47 |
| Bell, Linda | 23 | Mukerjee, Amitabha | 47 |
| Bhagat, Sonali | 97 | op den Akker, Rieks | 89 |
| Bobadilla, Emilio | 19 | Pardo, José M. | 31 |
| Boye, Johan | 23 | Poesio, Massimo | 154 |
| Carbone, Marco | 118 | Polanyi, Livia | 108 |
| Carvey, Hannah | 97 | Popescu-Belis, Andrei | 63, 163 |
| Caspar, Rachel | 1 | Porzel, Robert | 55 |
| Cassell, Justine | 101 | Rääbis, Andriela | 39 |
| Chambers, Nathanael | 9 | Raina, Achla M. | 47 |
| Clark, Alexander | 163 | Raymond, Christian | 102 |
| Cresswell, Cassandre | 51 | Robinson, Kerry | 19 |
| Culy, Chris | 108 | Rosenfeld, Roni | 81 |
| Damnati, Géraldine | 102 | Schlangen, David | 136 |
| Danlos, Laurence | 127 | Schless, Volker | 31 |
| de Córdoba, Ricardo | 31 | Schubert, Volker | 31 |
| De Mori, Renato | 102 | Schwetcke, Henry | 1 |
| Deterding, Robin | 1 | Shieber, Stuart | 118 |
| d'Haro, Luis F. | 31 | Shriberg, Elizabeth | 97 |
| Dhillon, Raj | 97 | Suarez, Ana | 19 |
| Di Fabbrizio, Guiseppe | 72 | Thione, Gian Lorenzo | 108 |
| Flicker, Laura | 1 | Thomas, Kavita | 43 |
| Forbes-Riley, Kate | 144 | Tomko, Stefanie | 81 |
| Frank, Geoffrey | 1 | Tsovaltzi, Dimitra | 35 |
| Gabsdil, Malte | 27 | Tur, Gokhan | 72 |
| Gal, Ya'akov | 118 | van den Berg, Martin | 108 |
| Gerassimenko, Olga | 39 | Visscher, Wendy | 1 |
| Grosz, Barbara | 118 | Ward, Karen | 85 |
| Guinn, Curry | 1 | Wirén, Mats | 23 |
| Gustafson, Joakim | 23 | Zelon, Harvey | 1 |
| Hakkani-Tür, Dilek | 72 | Zimmer, James | 1 |
| Hamerich, Stefan | 31 | Zufferey, Sandrine | 63 |
| Hennoste, Tiit | 39 | | |
| Hollingsed, Tasha | 85 | | |
| Horowitz, David | 19 | | |
| Hubal, Robert | 1 | | |
| Igel, Stefan | 31 | | |
| Jain, Prateek | 47 | | |
| Jovanovic, Natasa | 89 | | |
| Kaiser, Elsi | 51 | | |
| Karagjosova, Elena | 35 | | |
| Kladis, Basilis | 31 | | |
| Kocsis, Otilia | 31 | | |
| Koit, Mare | 39 | | |
| Kumar, Sumit | 47 | | |
| Lascelles, Mark | 19 | | |