2nd International Workshop on
Scalable Natural Language Understanding
(ScaNaLU)

Proceedings of the
HLT-NAACL 2004 Workshop

May 6, 2004
Boston, MA, USA
2nd International Workshop on
Scalable Natural Language Understanding
(ScaNaLU)

Proceedings of the
HLT-NAACL 2004 Workshop

Robert Porzel, editor

May 6, 2004
Boston, MA, USA

Published by the Association for Computational Linguistics
http://www.aclweb.org
This volume contains the papers presented at the HLT/NAACL 2004 workshop entitled: Scalable Natural Language Understanding. The workshop was held on May 6th, 2004 and is the second in a series that started in Heidelberg, Germany on May 23rd and 24th 2002. The papers were refereed by an international panel of experts in the field.

The workshop is the first held under the auspices of the HLT/NAACL to be directed at issues concerning the scalability of natural language understanding and generation systems. There is a growing need for systems that can understand and generate natural language in applications that require substantial amounts of knowledge as well as reasoning capabilities. Most current implemented systems for natural language understanding (NLU) are decoupled from any reasoning processes, which makes them narrow and brittle.

Furthermore, they do not appear to be scalable in the sense that the techniques used in such systems do not appear to generalize to more complex applications. While significant work has been done in developing theoretical underpinnings of systems that use knowledge and reasoning (e.g., development of models of linguistic interpretation using abductive reasoning, intention recognition, formal models of dialogue, formal models of lexical and utterance meaning, and utterance planning), it has often proved difficult to utilize such theories in robust working systems.

Another major barrier has been the vast amount of linguistic and world knowledge needed. But there is now significant progress in compiling the required knowledge, using manual, statistical and hybrid techniques. But even as these resources become available, we still lack some key conceptual and computational frameworks that will form the foundation for effective scalable natural language systems.

The collection of researchers who face the challenges involved in scaling human language technology is growing, as well as a greater effort to develop systems that robustly interact with users in intuitive and conversational ways.

We wish to thank the members of the Program Committee for reviewing the submissions on a very tight schedule.

James Allen, University of Rochester
Jerome Feldman, International Computer Science Institute
Rainer Malaka, European Media Laboratory, GmbH
Johanna Moore, University of Edinburgh
Robert Porzel, European Media Laboratory, GmbH
WORKSHOP CO-CHAIRS:

James Allen, Rochester, Chair
Jerry Feldman, Berkeley, Chair
Rainer Malaka, Heidelberg, Chair
Johanna Moore, Edinburgh, Chair
Robert Porzel, Heidelberg, Chair

PROGRAM COMMITTEE:

Jan Alexandersson, German Research Center for Artificial Intelligence
Jaime Carbonell, Carnegie Mellon University
Dan Gildea, University of Rochester
Sanda Harabagiu, Southern Methodist University
Martha Palmer, University of Pennsylvania
Stanley Peters, Stanford University
Massimo Poesio, University of Essex
Carolyn Penstein Rose, Carnegie Mellon University
Matthew Stone, Rutgers University
Table of Contents

Robustness versus Fidelity in Natural Language Understanding
Mark G. Core and Johanna D. Moore .................................................. 1

Towards Measuring Scalability in Natural Language Understanding Tasks
Robert Porzel and Rainer Malaka ....................................................... 9

A Little Goes a Long Way: Quick Authoring of Semantic Knowledge Sources for Interpretation
Carolyn Penstein Rosé and Brian S. Hall ........................................ 17

Ends-based Dialogue Processing
Jan Alexandersson, Tilman Becker, Ralf Engel, Markus Löffelt, Elsa Pecourt, Peter Poller,
Norbert Pfleger and Norbert Reithinger ........................................... 25

Scalable Construction-Based Parsing and Semantic Analysis
John Bryant ......................................................................................... 33

Scaling Understanding up to Mental Spaces
Eva Mok, John Bryant and Jerome Feldman ....................................... 41

Different Sense Granularities for Different Applications
Martha Palmer, Olga Babko-Malaya and Hoa Trang Dang .................. 49

Making Relative Sense: From Word-graphs to Semantic Frames
Robert Porzel, Berenike Loos and Vanessa Micelli .......................... 57

HYPERBUG: A Scalable Natural Language Generation Approach
Martin Klarner ..................................................................................... 65
WORKSHOP PROGRAM

Thursday, May 6, 2004

09:00-9:15   Welcome
09:15-09:45  Robustness versus Fidelity in Natural Language Understanding
            Mark G. Core and Johanna D. Moore
09:45-10:15 Towards Measuring Scalability in Natural Language Understanding Tasks
            Robert Porzel and Rainer Malaka
10:15-11:00  Break
11:00-11:30  A Little Goes a Long Way: Quick Authoring of Semantic Knowledge Sources
            for Interpretation
            Carolyn Penstein Rosé and Brian S. Hall
11:30-12:00 Ends-based Dialogue Processing
            Jan Alexandersson, Tilman Becker, Ralf Engel, Markus Löckelt, Elsa Pecourt,
            Peter Poller, Norbert Pfleger and Norbert Reithinger
12:00-13:00  Lunch
13:00-13:30  Scalable Construction-Based Parsing and Semantic Analysis
            John Bryant
13:30-14:00  Scaling Understanding up to Mental Spaces
            Eva Mok, John Bryant and Jerome Feldman
14:30-15:00  Different Sense Granularities for Different Applications
            Martha Palmer, Olga Babko-Malaya and Hoa Trang Dang
15:00-15:30  Making Relative Sense: From Word-graphs to Semantic Frames
            Robert Porzel, Berenike Loos and Vanessa Micelli
15:30-16:00  Break
16:00-16:30  HYPERBUG: A Scalable Natural Language Generation Approach
            Martin Klarner
16:30-17:00  Final Discussion
**Author Index**

<table>
<thead>
<tr>
<th>Author</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexandersson, Jan</td>
<td>25</td>
</tr>
<tr>
<td>Babko-Malaya, Olga</td>
<td>49</td>
</tr>
<tr>
<td>Becker, Tilman</td>
<td>25</td>
</tr>
<tr>
<td>Bryant, John</td>
<td>33, 41</td>
</tr>
<tr>
<td>Core, Mark G.</td>
<td>1</td>
</tr>
<tr>
<td>Dang, Hoa Trang</td>
<td>49</td>
</tr>
<tr>
<td>Engel, Ralf</td>
<td>25</td>
</tr>
<tr>
<td>Feldman, Jerome</td>
<td>41</td>
</tr>
<tr>
<td>Hall, Brian S</td>
<td>17</td>
</tr>
<tr>
<td>Klarner, Martin</td>
<td>65</td>
</tr>
<tr>
<td>Löckelt, Markus</td>
<td>25</td>
</tr>
<tr>
<td>Loos, Berenike</td>
<td>57</td>
</tr>
<tr>
<td>Malaka, Rainer</td>
<td>9</td>
</tr>
<tr>
<td>Micelli, Vanessa</td>
<td>57</td>
</tr>
<tr>
<td>Mok, Eva</td>
<td>41</td>
</tr>
<tr>
<td>Moore, Johanna D</td>
<td>1</td>
</tr>
<tr>
<td>Palmer, Martha</td>
<td>49</td>
</tr>
<tr>
<td>Pecourt, Elsa</td>
<td>25</td>
</tr>
<tr>
<td>Pfleger, Norbert</td>
<td>25</td>
</tr>
<tr>
<td>Poller, Peter</td>
<td>25</td>
</tr>
<tr>
<td>Porzel, Robert</td>
<td>9, 57</td>
</tr>
<tr>
<td>Reithinger, Norbert</td>
<td>25</td>
</tr>
<tr>
<td>Rosé, Carolyn Penstein</td>
<td>17</td>
</tr>
</tbody>
</table>