Proceedings of the Workshop

Edited by Amit Bagga, Breck Baldwin, and Sara Shelton

> 22 June 1999 University of Maryland College Park, Maryland, USA

Published by the Association for Computational Linguistics

©1999, Association for Computational Linguistics

Order additional copies from:

Association for Computational Linguistics 75 Paterson Street, Suite 9 New Brunswick, NJ 08901 USA +1-732-342-9100 phone +1-732-342-9339 fax acl@aclweb.org

PREFACE

Coreference is in some sense nature's own hyperlink. It conveys how individual statements are connected within documents, across documents and across bodies of human knowledge. Consequently coreference resolution algorithms are at the core of Natural Language Processing. Most of the work done on coreference deals with a single language and a single text document (usually newswire).

As NLP research matures into "application" phases (as opposed to theory-development), NLP systems are moving beyond traditional research sources to document sets which reflect a more natural, research-oriented mix. This shift can be seen in both the document sets and tasks used in recent HUB, MET, and TDT evaluations. The new sources consist of documents in several different languages, documents with data from noisy sources, and documents containing multimedia. In order for NLP systems to make a successful transition to these new sources, it is critical for coreference resolution systems to also work on these new sources.

The Workshop on Coreference and Its Applications, held on June 22nd, 1999 at the University of Maryland, College Park, Maryland, USA, was organized around the goals of discussing, promoting, and presenting new research results (positive and negative) regarding the theory, design and evaluation of coreference resolution systems that deal with non-traditional data sources. In particular, the goal of the workshop was to focus on systems dealing with the following types of coreference:

- Cross-document coreference
- Coreference resolution in languages other than English
- Coreference resolution on noisy data
- Coreference resolution on non-text data (example: human speech)
- Coreference resolution on multimedia data

In addition, the workshop also focused on innovative NLP applications that rely heavily on coreference resolution systems. The workshop was sponsored by the Association for Computational Linguistics (ACL).

We would like to thank all authors who showed their interest by submitting papers to the workshop. We would also like to thank the members of the program committee: Branimir Boguraev (IBM Research), Ed Hovy (USC Information Sciences Institute), Mark T. Maybury (MITRE), and Ruslan Mitkov (University of Wolverhampton).

Amit Bagga Breck Baldwin Sara Shelton

9:00--9:05 **Opening** Session: Cross-Document Coreference **Cross-Document Event Coreference:** 9:05--9:30 Amit Bagga and Breck Baldwin, General Electric CRD and University of Annotations, Experiments, and Pennsylvania Observations Yael Ravin and Zunaid Kazi, IBM T.J. Is Hillary Rodham Clinton the President? 9:30--9:55 Disambiguating Names Across Watson Research Center Documents Session: Multimedia Coreference Identification of Coreference Between 9:55--10:20 Koichi Yamada, Kazunari Sugiyama, Yasunori Yonamine and Hiroshi Nakagawa, Names and Faces Yokohama National University 10:20--10:50 Coffee Break Automatic Slide Presentation from Utiyama Masao and Hasida Koiti, Shinshu 10:50--11:15 University and Electrotechnical Laboratory Semantically Annotated Documents (ETL) Session: Coreference in Non-English Languages 11:15--11:40 Masaki Murata, Hitoshi Isahara and Makoto Resolution of Indirect Anaphora in Japanese Sentences Using Examples "X Nagao, Communications Research Laboratory, and Kyoto University no Y (Y OF X)" 11:40--12:05 Masaki Murata, Hitoshi Isahara and Makoto Pronoun Resolution in Japanese Sentences Nagao, Communications Research Using Surface Expressions and Examples Laboratory, and Kyoto University 12:05--13:30 Lunch Break **Corpus-Based Anaphora Resolution** 13:30--13:55 Michael Paul, Kazuhide Yamamoto and **Towards Antecedent Preference** Eiichiro Sumita, ATR Interpreting Telecommunications Research Laboratory 13:55--14:20 Marco Rocha, Universidade Federal de Coreference resolution in dialogues in Santa Catarina **English and Portuguese** Orthographic Co-Reference Resolution 14:20--14:45 Pedro Amo, Francisco L. Ferreras, Fernando Cruz and Saturnino Maldonado, Between Proper Nouns Through the Calculation of the Relation of Universidad de Alcala "Replicancia" 14:45--15:10 Jesus Peral, Manuel Palomar and Antonio Coreference-oriented Interlingual Slot Structure & Machine Translation Ferrandez, University of Alicante **Coffee Break** 15:10--15:45 Session: Applications of Coreference 15:45--16:10 Saliha Azzam, Kevin Humphreys and Using Coreference Chains for Text

Summarization

Robert Gaizauskas, University of Sheffield

Workshop Program

| | Thomas S. Morton, University of Pennsylvania | Using Coreference for Question Answering | |
|---------------------------------|---|---|--|
| Session: Coreference Annotation | | | |
| | Kees van Deemter and Rodger Kibble, University of Brighton | What is coreference, and what should coreference annotation be? | |

Table of Contents

| Cross-Document Event Coreference: Annotations, Experiments, and Observations Amit Bagga and Breck Baldwin | . 1 |
|--|-----|
| Is Hillary Rodham Clinton the President? Disambiguating Names Across Documents Yael Ravin and Zunaid Kazi | . 9 |
| Identification of Coreference Between Names and Faces Koichi Yamada, Kazunari Sugiyama, Yasunori Yonamine and Hiroshi Nakagawa | 17 |
| Automatic Slide Presentation from Semantically Annotated Documents Utiyama Masao and Hasida Koiti | 25 |
| Resolution of Indirect Anaphora in Japanese Sentences Using Examples "X No Y (Y Of X)" | |
| Masaki Murata, Hitoshi Isahara and Makoto Nagao | 31 |
| Pronoun Resolution in Japanese Sentences Using Surface Expressions and Examples Masaki Murata, Hitoshi Isahara and Makoto Nagao | 39 |
| Corpus-based Anaphora Resolution Towards Antecedent Preference Michael Paul, Kazuhide Yamamoto and Eiichiro Sumita | 47 |
| Coreference Resolution in Dialogues in English and Portuguese Marco Rocha | 53 |
| Orthographic Co-reference Resolution Between Proper Nouns Through the Calculation of the Relation of "Replicancia" | |
| Pedro Amo, Francisco L. Ferreras, Fernando Cruz and Saturnino Maldonado | 61 |
| Coreference-oriented Interlingual Slot Structure & Machine Translation Jesus Peral, Manuel Palomar and Antonio Ferrandez | 69 |
| Using Coreference Chains for Text Summarization Saliha Azzam, Kevin Humphreys and Robert Gaizauskas | 77 |
| Using Coreference for Question Answering Thomas S. Morton | 85 |
| What Is Coreference, and What Should Coreference Annotation Be? Kees Van Deemter and Rodger Kibble | 90 |

.