Empirical Modeling of Semantic Equivalence and Entailment

Proceedings of the Workshop

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Introduction

The last few years have seen a surge in interest in modeling techniques aimed at measuring semantic equivalence and entailment, with work on paraphrase acquisition/generation, WordNet-based expansion, distributional similarity, supervised learning of semantic variability in information extraction, and the identification of patterns in template-based QA. Being able to identify when two strings ”mean the same thing” or that one entails the other are crucial abilities for a broad range of NLP-related applications, ranging from question answering to summarization.

These proceedings contain a rich variety of papers centered on the problem of modeling semantic overlap between linguistic strings. This is a difficult problem space, encompassing issues of lexical choice, syntactic alternation, semantic inference, and reference/discourse structure.

We were pleased by the strong level of interest in the workshop, which resulted in a number of high-quality submissions. Each paper was blind-reviewed by 2-3 members of the Program Committee, and we were forced to make some difficult choices in determining the final schedule.

This workshop is intended to bring together people working on empirical, application-independent approaches to the practical problems of semantic inference. While different applications face similar underlying semantic problems, these problems have typically been addressed in an application-specific manner. In the absence of a generic evaluation framework, it is difficult to compare semantic methods that were developed for different applications. We are particularly hopeful that the workshop will help foster discussion around common datasets and evaluation strategies that will help guide future work in this area.

We would like to express our deepest gratitude to the hard-working members of the program committee. We’d also like to thank Mirella Lapata, Jason Eisner, Philipp Koehn, and Dragomir Radev for their organizational help.

We hope you enjoy this workshop!

Bill Dolan and Ido Dagan
Organizers:

Bill Dolan, Microsoft Research
Ido Dagan, Bar Ilan University

Program Committee:

Srinivas Bangalore, AT&T Research
Regina Barzilay, MIT
Chris Brockett, Microsoft Research
Pascale Fung, Hong Kong University of Science and Technology
Oren Glickman, Bar Ilan University
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Chris Quirk, Microsoft Research
Maarten de Rijke, University of Amsterdam
Hinrich Schuetze, University of Stuttgart
Satoshi Sekine, New York University
Peter Turney, National Research Council of Canada

Invited Speaker:

Dan Roth, University of Illinois at Urbana-Champaign
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Conference Program

Thursday, June 30, 2005

9:00–9:15 Opening Remarks by Bill Dolan and Ido Dagan

9:15–9:40 Classification of Semantic Relations by Humans and Machines
Erwin Marsi and Emiel Krahmer

9:40–10:05 The Distributional Similarity of Sub-Parses
Julie Weeds, David Weir and Bill Keller

10:05–10:30 Measuring the Semantic Similarity of Texts
Courtney Corley and Rada Mihalcea

10:30–11:00 Break

11:00–11:25 Training Data Modification for SMT Considering Groups of Synonymous Sentences
Hideki Kashioka

11:25–12:25 Invited Talk by Dan Roth, University of Illinois at Urbana-Champaign

12:25–2:00 Lunch

2:00–2:25 Recognizing Paraphrases and Textual Entailment Using Inversion Transduction Grammars
Dekai Wu

2:25–2:50 Local Textual Inference: Can it be Defined or Circumscribed?
Annie Zaenen, Lauri Karttunen and Richard Crouch

2:50–3:15 Discovering Entailment Relations Using “Textual Entailment Patterns”
Fabio Massimo Zanzotto, Maria Teresa Pazienza and Marco Pennacchiotti

3:15–3:40 A Probabilistic Setting and Lexical Coocurrence Model for Textual Entailment
Oren Glickman and Ido Dagan

3:40–4:00 Break
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4:00–4:25  Generating an Entailment Corpus from News Headlines
           John Burger and Lisa Ferro

4:25–4:50  Definition and Analysis of Intermediate Entailment Levels
           Roy Bar-Haim, Idan Szpektor and Oren Glickman

4:50–5:40  Panel Discussion