Introduction

Characteristic to all areas of human activity (from poetic to ordinary to scientific) and, thus, to all types of discourse, metaphor becomes an important problem for natural language processing. Its ubiquity in language has been established in a number of corpus studies and the role it plays in human reasoning has been confirmed in psychological experiments. This makes metaphor an important research area for computational and cognitive linguistics, and its automatic identification and interpretation indispensable for any semantics-oriented NLP application.

The work on metaphor in NLP and AI started in the 1980s, providing us with a wealth of ideas on the structure and mechanisms of the phenomenon. The last decade witnessed a technological leap in natural language computation, whereby manually crafted rules gradually give way to more robust corpus-based statistical methods. This is also the case for metaphor research. In the recent years, the problem of metaphor modeling has been steadily gaining interest within the NLP community, with a growing number of approaches exploiting statistical techniques. Compared to more traditional approaches based on hand-coded knowledge, these more recent methods tend to have a wider coverage, as well as be more efficient, accurate and robust. However, even the statistical metaphor processing approaches so far often focused on a limited domain or a subset of phenomena. At the same time, recent work on computational lexical semantics and lexical acquisition techniques, as well as a wide range of NLP methods applying machine learning to open-domain semantic tasks, open many new avenues for creation of large-scale robust tools for recognition and interpretation of metaphor.

This workshop is the first one focused on modelling of metaphor using NLP techniques. Recent related events include workshops on Computational Approaches to Figurative Language (NAACL 2007) and on Computational Approaches to Linguistic Creativity (NAACL 2009, NAACL 2010). We received 14 submissions and accepted 10. Each paper was carefully reviewed by at least 3 members of the Program Committee. The selected papers offer explorations into the following directions: (1) creation of metaphor-annotated datasets; (2) identification of new features that are useful for metaphor identification; (3) cross-lingual metaphor identification.

The papers represent a variety of approaches to utilization and creation of datasets. While existing annotated corpora were used in some papers (Dunn, Tsvetkov et al), most papers describe creation of new annotated materials. Along with annotation guidelines adapted from the MIP and MIPVU procedures (Badryzlova et al), more intuitive annotation protocols are explored in Beigman Klebanov and Flor, Hovy et al, Heintz et al, Mohler et al, and Strzalkowski et al.

The papers present a number of novel and extended features for metaphor detection. Topic models, abstractness/concreteness, and semantic classifications based on an ontology are each used in multiple papers. Additional features include classes of named entities (Tsvetkov et al), WordNet examples and glosses (Wilks et al); suggestive evidence is presented regarding potential usefulness of a relationality feature (Jamrozik et al). A distinguishing characteristic of multiple submissions is the interest in cross-lingual approaches to metaphor identification. Accordingly, contributors explore features that can be supported by resources that exist in languages like Russian, Spanish, and Farsi (Strzalkowski et al., Tsvetkov et al, Heintz et al).

The program of the workshop also features two invited talks that complement the discussion by
addressing topics that are not addressed by this year’s submissions, namely, the relationship between metaphor and action (Srini Narayanan), and interpretation of metaphors (John Barnden).

We wish to thank everyone who showed interest and submitted a paper, all of the authors for their contributions, the members of the Program Committee for their thoughtful reviews, the invited speakers for sharing their perspectives on the topic, and all the attendees of the workshop. All of these factors contribute to a truly enriching event!

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Aline Villavicencio, Federal University of Rio Grande do Sul, Brazil and MIT, USA
Andreas Vlachos, University of Cambridge, UK
Yorick Wilks, Florida Institute of Human and Machine Cognition, USA

Invited Speakers:

Srini Narayanan, University of California, Berkeley, USA
John Barnden, University of Birmingham, UK
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9:10–10:05 Invited talk: Srini Narayanan “From Metaphor to Action”

10:05–10:30 What metaphor identification systems can tell us about metaphor-in-language
Jonathan Dunn

10:30–11:00 Coffee break

11:00–11:25 Argumentation-Relevant Metaphors in Test-Taker Essays
Beata Beigman Klebanov and Michael Flor

11:25–11:45 Relational words have high metaphoric potential
Anja Jamrozik, Eyal Sagi, Micah Goldwater and Dedre Gentner

11:45–12:10 Semantic Signatures for Example-Based Linguistic Metaphor Detection
Michael Mohler, David Bracewell, Marc Tomlinson and David Hinote

12:10–13:40 Lunch


14:20–14:45 Automatic Metaphor Detection using Large-Scale Lexical Resources and Conventional Metaphor Extraction
Yorick Wilks, Adam Dalton, James Allen and Lucian Galescu

14:45–15:10 Cross-Lingual Metaphor Detection Using Common Semantic Features
Yulia Tsvetkov, Elena Mukomel and Anatole Gershman

15:10–15:30 Identifying Metaphorical Word Use with Tree Kernels
Dirk Hovy, Shashank Shrivastava, Sujay Kumar Jauhar, Mrinmaya Sachan, Kartik Goyal, Huying Li, Whitney Sanders and Eduard Hovy

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16:00–16:25 Automatic Extraction of Linguistic Metaphors with LDA Topic Modeling
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16:25–16:50  Robust Extraction of Metaphor from Novel Data
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16:50–17:15  Annotating a Russian corpus of conceptual metaphor: a bottom-up approach
Yulia Badryzlova, Natalia Shekhtman, Yekaterina Isaeva and Ruslan Kerimov

17:15–17:30  Closing remarks