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Workshop on Graph-based Methods for Natural Language Processing TextGraphs-6

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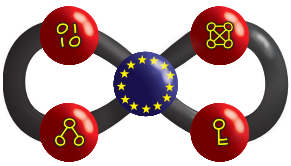

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Preface

TextGraphs is at its SIXTH edition! This confirms that two seemingly distinct disciplines, graph theoretic models and computational linguistics, are in fact intimately connected, with a large variety of Natural Language Processing (NLP) applications adopting efficient and elegant solutions from graph-theoretical framework.

The TextGraphs workshop series addresses a broad spectrum of research areas and brings together specialists working on graph-based models and algorithms for natural language processing and computational linguistics, as well as on the theoretical foundations of related graph-based methods.

This workshop series is aimed at fostering an exchange of ideas by facilitating a discussion about both the techniques and the theoretical justification of the empirical results among the NLP community members. Spawning a deeper understanding of the basic theoretical principles involved, such interaction is vital to the further progress of graph-based NLP applications.

The submissions to this year workshop were high quality and also the selection process was more competitive than in previous editions. We selected 9 out of 16 papers for an acceptance rate of about 55%. The predominant topics of such contributions are, as usual, semantic similarity and word sense disambiguation. However, thanks also to the special theme of this year in the area of machine learning, i.e. *Graphs in Structured Input/Output Learning*, a larger use of principled statistical approaches can be observed. This trend will be nicely supported by the very interesting invited talk by Prof. Hal Daumé III on advanced and practical machine learning, entitled: *Structured Prediction need not be Slow*.

Finally, we are grateful to the European Community project, EternalS: "Trustworthy Eternal Systems via Evolving Software, Data and Knowledge" (project number FP7 247758) for continuing to sponsor our workshop.

The organizers
Irina Matveeva, Lluís Màrquez, Alessandro Moschitti and Fabio Massimo Zanzotto
Portland, June 2011

Structured Prediction need not be Slow

Invited talk

Hal Daumé III

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Abstract

Classic algorithms for predicting structured data (eg., graphs, trees, etc.) rely on expensive (sometimes intractable) inference at test time. In this talk, I'll discuss several recent approaches that enable computationally efficient (eg., linear-time) prediction at test time. These approaches fall in the category of learning algorithms that optimize accuracy for some fixed notion of efficiency. I'll conclude by considering the question: can a learning algorithm figure out how to make fast predictions on its own?

Organizers:

Irina Matveeva, Dieselpoint Inc., USA
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Lluís Màrquez, Technical University of Catalonia, Spain
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Swapna Somasundaran, Siemens Corporate Research, USA

Invited Speaker:

Hal Daumé III, University of Maryland, USA

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TextGraphs-6 Program

Thursday, June 23, 2011

9:00–9:15 Opening Remarks

Special Track Session: "Graphs in Structured Input/Output Learning"

9:15–9:40 *A Combination of Topic Models with Max-margin Learning for Relation Detection*
Dingcheng Li, Swapna Somasundaran and Amit Chakraborty

9:40–10:05 *Nonparametric Bayesian Word Sense Induction*
Xuchen Yao and Benjamin Van Durme

10:05–10:30 *Invariants and Variability of Synonymy Networks: Self Mediated Agreement by Confluence*
Benoit Gaillard, Bruno Gaume and Emmanuel Navarro

10:30–11:00 Coffee Break

Session 1

11:00–11:25 *Word Sense Induction by Community Detection*
David Jurgens

11:25–12:30 Invited talk by Hal Daumé III: *Structured Prediction need not be Slow*

12:30–14:00 Lunch Break

Thursday, June 23, 2011 (continued)

Session 2

14:00–14:25 *Using a Wikipedia-based Semantic Relatedness Measure for Document Clustering*
Majid Yazdani and Andrei Popescu-Belis

14:25–14:50 *GrawlTCQ: Terminology and Corpora Building by Ranking Simultaneously Terms, Queries and Documents using Graph Random Walks*
Clément de Groc, Xavier Tannier and Javier Couto

14:50–15:15 *Simultaneous Similarity Learning and Feature-Weight Learning for Document Clustering*
Pradeep Muthukrishnan, Dragomir Radev and Qiaozhu Mei

15:15–15:45 Coffee Break

Session 3

15:45–16:10 *Unrestricted Quantifier Scope Disambiguation*
Mehdi Manshadi and James Allen

16:10–16:35 *From ranked words to dependency trees: two-stage unsupervised non-projective dependency parsing*
Anders Søgaard

16:35–17:30 Panel Discussion

17:30–17:45 Closing Session