

ACL 2012

# TextGraphs-7

**Workshop on Graph-based Methods  
for Natural Language Processing**

**Workshop Proceedings**

July 13, 2012  
Jeju, Republic of Korea

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## Introduction

The TextGraphs is in its 7th edition. This workshops series brings together researchers interested in Graph Theory applied to Natural Language Processing and provides an environment for further integration of graph-based solutions into NLP tasks. The workshops encourage discussions about theoretical justifications from Graph Theory that explain empirical results obtained in the NLP community. As a consequence, a deeper understanding of new theories of graph-based algorithms is likely to help to create new approaches and widen the usage of graphs for NLP applications.

Recent years have shown an increased interest in integrating various aspects of the field of Graph Theory into Natural Language Processing. Many language phenomena can be naturally put into graph-based representations and in the last 5 years a significant number of NLP applications adopted efficient and elegant solutions from graph theoretical frameworks. These applications range from part-of-speech tagging, word sense disambiguation, ontology learning and parsing to information extraction, semantic role assignment, summarization and sentiment analysis to name but a few.

The emergence of new fields of research focusing on the social media such as Twitter and Facebook brought the graph-based methods even more into focus. In particular, graph-based algorithms are used to explore social network connections and propagation of information in those networks in addition to exploring the connections between the language entities. As a consequence, many new applications have been emerging such as rumor proliferation, e-reputation, multiple identity detection, language dynamics learning and future events prediction to name but a few. These new trends are reflected in the special theme for TextGraphs-7 "Understanding and Mining Social Media Using Graphs: Information Propagation in Blogs and Tweets".

The submissions to this year workshop were again of high quality and we had a competitive selection process. The accepted papers cover a broad range of topics from semantic similarity and word sense disambiguation to relation learning. Three papers cover the areas of the special theme, such as link analysis for twitter messages, social tagging, social network extraction.

The workshop series and the special theme are supported by the joint invited talk by Rada Mihalcea and Dragomir Radev.

The workshop organizers  
Irina Matveeva, Gaël Dias and Ahmed Hassan

July 13, 2012  
Jeju, Republic of Korea



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**Invited Speakers:**

Rada Mihalcea, University of North Texas, USA  
Dragomir Radev, University of Michigan, USA



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## Conference Program

### Friday July 13, 2012

- 8:45            Opening Remarks
- 9:00            Session 1
- 9:00            Invited Talk by Rada Mihalcea and Dragomir Radev
- 10:05           *A New Parametric Estimation Method for Graph-based Clustering*  
Javid Ebrahimi and Mohammad Saniee Abadeh
- 10:30           Coffee Break
- 11:00           Session 2
- 11:00           *Extracting Signed Social Networks from Text*  
Ahmed Hassan, Amjad Abu-Jbara and Dragomir Radev
- 11:25           *Using Link Analysis to Discover Interesting Messages Spread Across Twitter*  
Min-Chul Yang, Jung-Tae Lee and Hae-Chang Rim
- 11:50           *Graph Based Similarity Measures for Synonym Extraction from Parsed Text*  
Einat Minkov and William Cohen
- 12:15           Lunch Break
- 14:00           *Semantic Relatedness for Biomedical Word Sense Disambiguation*  
Kiem-Hieu Nguyen and Cheol-Young Ock
- 14:25           *Identifying Untyped Relation Mentions in a Corpus given an Ontology*  
Gabor Melli
- 14:50           *Cause-Effect Relation Learning*  
Zornitsa Kozareva
- 15:30           Coffee Break

**Friday July 13, 2012 (continued)**

16:00          Session 3

16:00          *Bringing the Associative Ability to Social Tag Recommendation*  
Miao Fan, Yingnan Xiao and Qiang Zhou

16:25          Closing Session