Proceedings of the 5th Workshop on
Automated Knowledge Base Construction (AKBC)

Proceedings of the 5th Workshop on Automated Knowledge Base Construction (AKBC) at the 2016 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies

Proceedings of the Workshop

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ISBN 978-1-941643-53-2

Introduction

Extracting knowledge from Web pages and integrating it into a coherent knowledge base (KB) is a task that spans the areas of natural language processing, information extraction, information integration, databases, search, and machine learning. Recent years have seen significant advances in knowledge base construction, in both academia and industry. Many popular offerings, including digital assistants (Siri, Cortana, and Google Now) as well as search interfaces (Yahoo!, Bing, and Google) leverage semantic understanding and structured knowledge bases to respond to users. A similarly abundant set of knowledge systems have been developed at top universities such as Stanford (DeepDive), Carnegie Mellon (NELL), the University of Washington (OpenIE), the University of Mannheim (DBpedia), and the Max Planck Institut Informatik (YAGO, WebChild) among others. Our workshop serves as a forum for researchers on knowledge base construction in both academia and industry.

Unlike many other workshops, our workshop puts less emphasis on conventional paper submissions and presentations, but focuses on visionary papers and discussions, and structures the program around high-profile keynotes that foster discussion. In addition, one of the workshop's unique characteristics is its nomadic nature; AKBC has co-located with conferences which serve diverse communities, attesting to the broad appeal of the topic. Following the standalone AKBC 2010, AKBC 2012 (HLT-NAACL), AKBC 2013 (CIKM), and AKBC 2014 (NIPS), have each featured a dozen invited talks, drawn 20-35 submissions, and attracted audiences of 75-100 from NLP, information extraction, and machine learning communities. Our speakers are similarly diverse, drawing from experts in knowledge base construction from academia, industry, and government agencies. AKBC has featured senior invited speakers from Google, Microsoft, Facebook, leading universities (MIT, Stanford, Univ. of Washington, CMU, Univ. of Massachusetts, and more), and DARPA. With this year's proposal, we would like to continue the tradition of bringing together researchers on the frontier of breakthrough research from different communities. By inviting established researchers for keynotes, and by focusing particularly on vision paper submissions, we aim to provide a vivid forum of discussion about the field of automated knowledge base construction.

Topics of Interest:

- machine learning on text; unsupervised, lightly- and distantly-supervised learning representation learning; distributional semantics; ontology construction
- human-computer collaboration in KB construction; automated population of wikis
- inference for graphical models and structured prediction; scalable approximate inference
- named entity extraction; relation extraction; (open) information extraction
- entity resolution; information integration; schema alignment; ontology alignment; monolingual alignment; alignment between KBs and text
- pattern analysis; semantic analysis of natural language; learning by reading
- databases; distributed information systems; probabilistic databases
- scalable computation; distributed computation
- queries on mixtures of structured and unstructured data; querying under uncertainty
- dynamic models; online adaptation of knowledge; temporal KBs; belief revision in KBs
- languages, toolkits and systems for automated KB construction;
- demonstrations of existing automatically-built KBs

Organizers:

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Tim Rocktaschel, University College London, UK
Danqi Chen, Stanford University, USA
Sameer Singh, University of Washington, USA

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Pontus Stenetorp (University College London)
Partha Pratim Talukdar (Indian Institute of Science)
Niket Tandon (Max-Planck-Institut für Informatik)
Philippe Thomas (German Research Centre for Artificial Intelligence)
Larysa Visengeriyeva (Technische Universität Berlin)
Andreas Vlachos (University of Sheffield)
Bishan Yang (Carnegie Mellon University)

Invited Speakers:

Antoine Bordes, Facebook Artificial Intelligence Research
William Cohen, Carnegie Mellon University
Benjamin Van Durme, Johns Hopkins University
Oren Etzioni, Allen Institute for Artificial Intelligence
Percy Liang, Stanford University
Chris Manning, Stanford University
Andrew McCallum, University of Massachusetts Amherst
Kristina Toutanova, Microsoft Research

Table of Contents

Using Graphs of Classifiers to Impose Constraints on Semi-supervised Relation Extraction
Lidong Bing, William Cohen, Bhuwan Dhingra and Richard Wang 1

Discovering Entity Knowledge Bases on the Web
Andrew Chisholm, Will Radford and Ben Hachey 7

IKE - An Interactive Tool for Knowledge Extraction
Bhavana Dalvi, Sumithra Bhakthavatsalam, Chris Clark, Peter Clark, Oren Etzioni, Anthony Fader and Dirk Groeneveld 12

Incorporating Selectional Preferences in Multi-hop Relation Extraction
Rajarshi Das, Arvind Neelakantan, David Belanger and Andrew McCallum 18

Knowledge Base Population for Organization Mentions in Email
Ning Gao, Mark Dredze and Douglas Oard 24

Enriching Wikidata with Frame Semantics
Hatem Mousselly Sergieh and Iryna Gurevych 29

Demonyms and Compound Relational Nouns in Nominal Open IE
Harinder Pal and Mausam - 35

But What Do We Actually Know?
Simon Razniewski, Fabian Suchanek and Werner Nutt 40

Learning Knowledge Base Inference with Neural Theorem Provers
Tim Rocktäschel and Sebastian Riedel 45

The Physics of Text: Ontological Realism in Information Extraction
Stuart Russell, Ole Torp Lassen, Justin Uang and Wei Wang 51

Know2Look: Commonsense Knowledge for Visual Search
Sreyasi Nag Chowdhury, Niket Tandon and Gerhard Weikum 57

Row-less Universal Schema
Patrick Verga and Andrew McCallum 63

An Attentive Neural Architecture for Fine-grained Entity Type Classification
Sonse Shimaoka, Pontus Stenetorp, Kentaro Inui and Sebastian Riedel 69

Regularizing Relation Representations by First-order Implications
Thomas Demeester, Tim Rocktäschel and Sebastian Riedel 75

Applying Universal Schemas for Domain Specific Ontology Expansion
Paul Groth, Sujit Pal, Darin McBeath, Brad Allen and Ron Daniel 81

Design of Word Association Games using Dialog Systems for Acquisition of Word Association Knowledge
Yuichiro Machida, Daisuke Kawahara, Sadao Kurohashi and Manabu Sassano 86

Call for Discussion: Building a New Standard Dataset for Relation Extraction Tasks
Teresa Martin, Fiete Botschen, Ajay Nagesh and Andrew McCallum 92

A Comparison of Weak Supervision methods for Knowledge Base Construction
Ameet Soni, Dileep Viswanathan, Niranjan Pachaiyappan and Sriraam Natarajan 97

A Factorization Machine Framework for Testing Bigram Embeddings in Knowledgebase Completion
Johannes Welbl, Guillaume Bouchard and Sebastian Riedel 103

Conference Program

Friday, June 17, 2016

9:00–9:10 *Opening Remarks*
AKBC Organizers

9:10–9:40 *Joint Compositional Learning from Text and Knowledge Bases*
Kristina Toutanova

9:40–10:10 *The Allen AI Science Challenge: Results, Lessons, and Open Questions*
Oren Etzioni

10:10–11:00 Morning Poster Session and Coffee Break

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Learning Knowledge Base Inference with Neural Theorem Provers
Tim Rocktäschel and Sebastian Riedel

Friday, June 17, 2016 (continued)

11:00–11:30 *Andrew McCallum's Mysterious Production of Facts (Talk TBA)*
Andrew McCallum

11:30–12:00 *Look Ma, No Neurons: Using Explicit Inference Rules to Complete a KB*
William Cohen

12:00–13:20 Lunch Break and Morning Posters

13:20–13:50 Contributed Talks 1

13:20–13:35 *The Physics of Text: Ontological Realism in Information Extraction*
Stuart Russell, Ole Torp Lassen, Justin Uang and Wei Wang

13:35–13:50 *Know2Look: Commonsense Knowledge for Visual Search*
Sreyasi Nag Chowdhury, Niket Tandon and Gerhard Weikum

13:50–14:15 *Meaningful Discourses (Talk TBA)*
Christopher Manning

14:15–14:40 *Common Sense and Language*
Benjamin Van Durme

14:40–15:10 Contributed Talks 2

14:40–14:55 *Row-less Universal Schema*
Patrick Verga and Andrew McCallum

14:55–15:10 *An Attentive Neural Architecture for Fine-grained Entity Type Classification*
Sonse Shimaoka, Pontus Stenetorp, Kentaro Inui and Sebastian Riedel

Friday, June 17, 2016 (continued)

15:10–16:00 Afternoon Poster Session and Coffee Break

Know2Look: Commonsense Knowledge for Visual Search
Sreyasi Nag Chowdhury, Niket Tandon and Gerhard Weikum

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Friday, June 17, 2016 (continued)

16:00–16:25 *Querying Unnormalized and Incomplete Knowledge Bases*
Percy Liang

16:25–16:50 *Memory Networks for Language Understanding: Successes and Challenges*
Antoine Bordes

16:50–17:30 *Afternoon Speaker Panel*
Christopher Manning, Benjamin Van Durme, Percy Liang, Antoine Bordes

17:30–17:45 *Closing Remarks*
AKBC Organizers

17:45–18:15 Evening Poster Session