

5th Workshop on Semantic Deep Learning (SemDeep-5)

August 12, 2019 - Macau



Who are we?



Thierry Declerck
DFKI GmbH



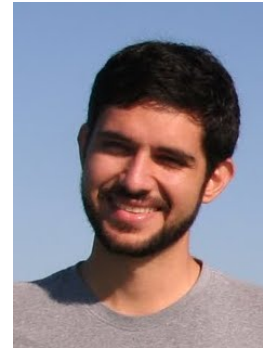
Luis Espinosa-Anke
Cardiff University



Dagmar Gromann
University of Vienna



José Camacho Collados
Cardiff University



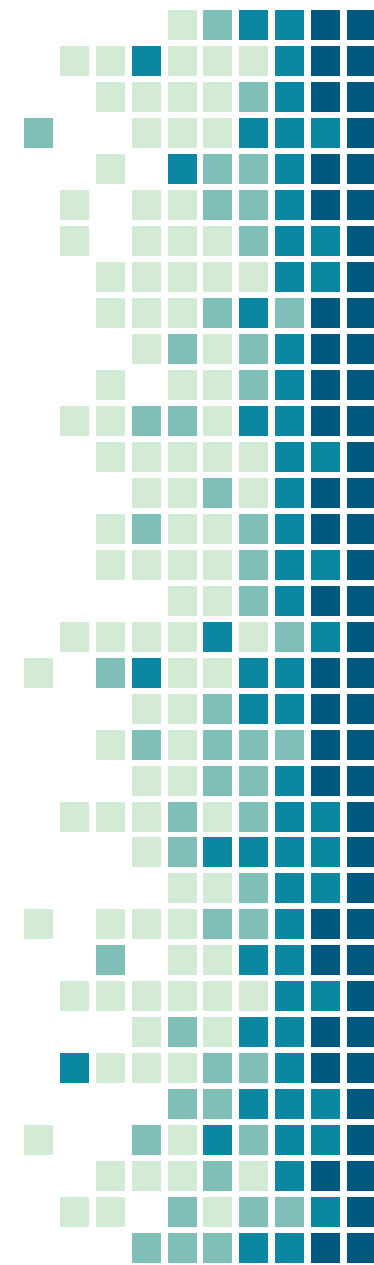
Mohammad Taher Pilehvar
Iran University of Science and Technology



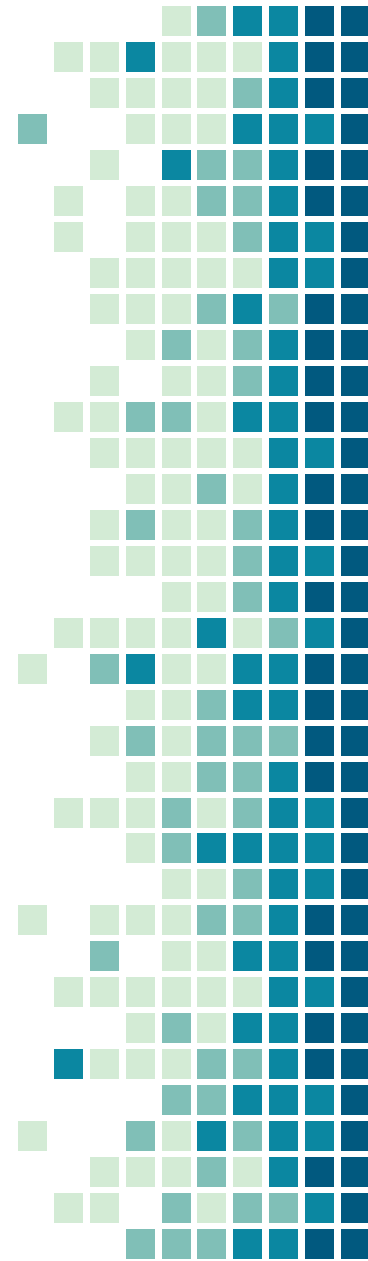
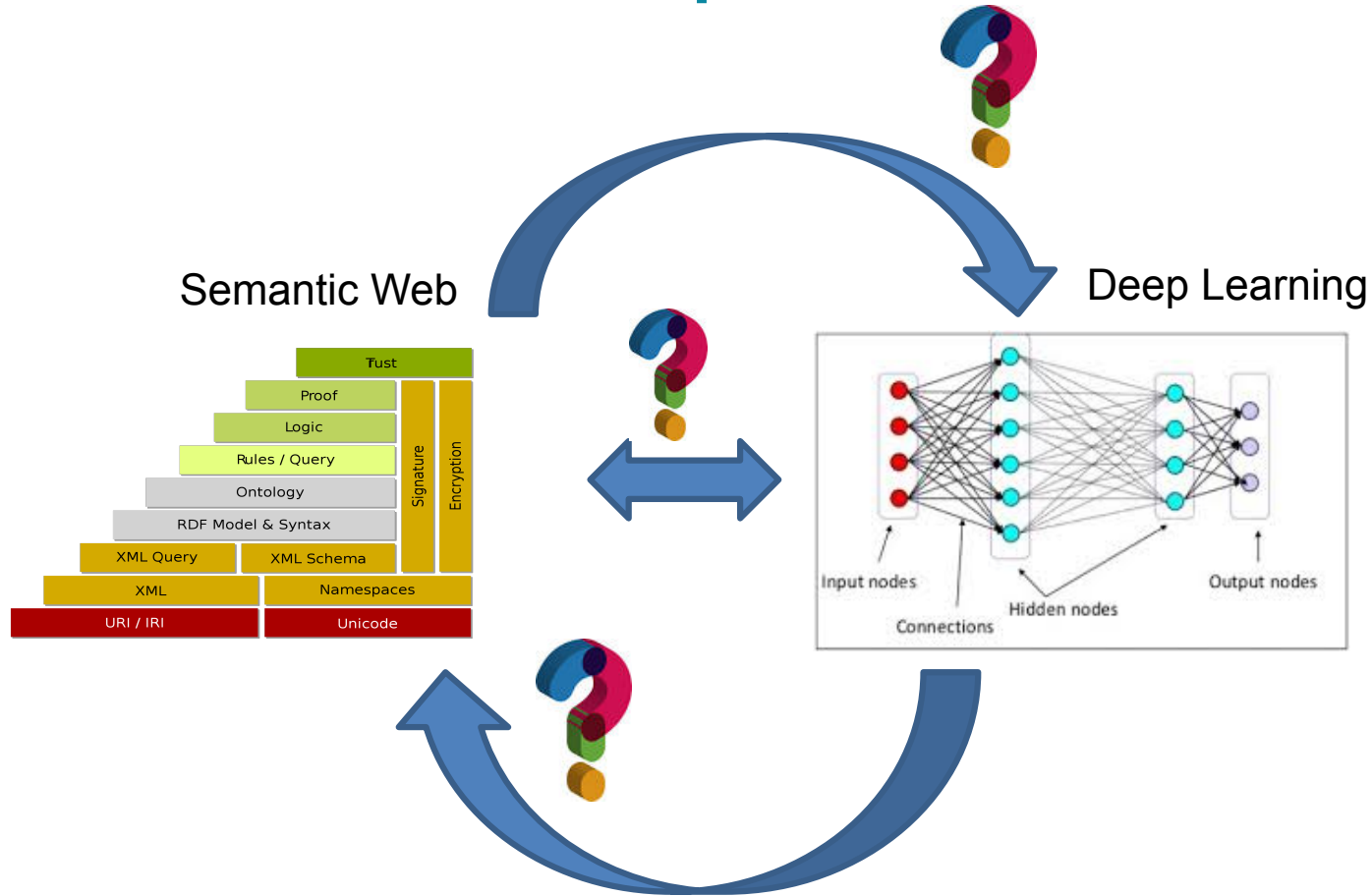
What is SemDeep?

A platform for

- joining Semantic Web and deep learning research and industry communities
- semantically challenging tasks addressed by both communities



What is SemDeep about?



What are our topics?

Structured knowledge in deep learning:

- neural networks and logic rules for semantic compositionality
- learning and applying knowledge graph embeddings
- multilingual resources for neural representations of linguistics

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Reasoning and inferences and deep learning:

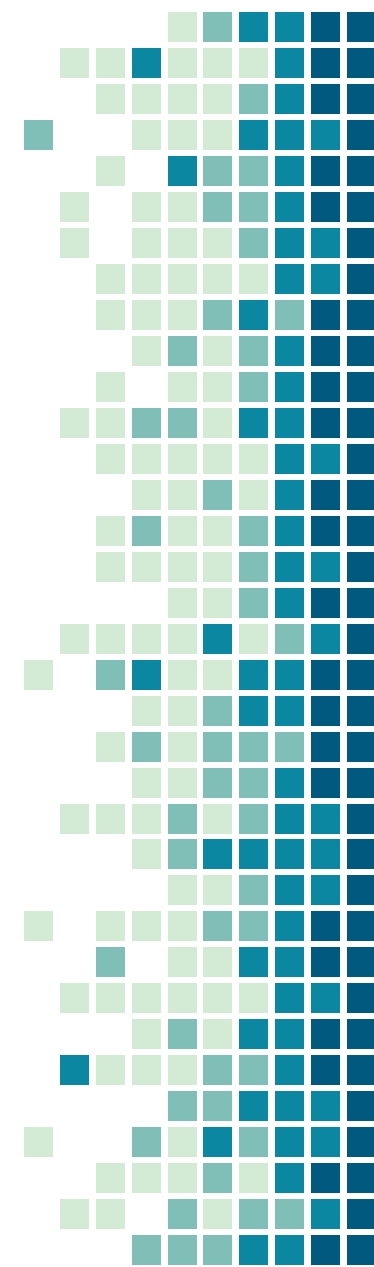
- commonsense reasoning and vector space models
- axioms as deep learning constraints in the training process
- reasoning with deep learning architectures and approaches

...

Learning knowledge representations with deep learning:

- knowledge-base completion with logical rules
- deep ontology learning
- deep learning representations from text

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What has happened so far?



SemDeep-1 @ ESWC:

- Keynote: Volker Tresp: *Learning with Knowledge Graphs*
- knowledge-based embeddings
- Event detection with DL & SW
- Argumentation on Ontological Representations

SemDeep-2 @ IWCS:

- Negative Sampling on Deep Structured Semantic Models
- Graph Representations of Word Embeddings
- Multimodal Networks
- Tag extraction using end-to-end memory nets
- Coreference with Neural Semantic Parsing

SemDeep-3 @ COLING:

- KeyNote 1: Steven Schockaert : *Knowledge Representation with Conceptual Spaces*
- KeyNote 2: Christos Christodoulopoulos: *Knowledge Representation and Extraction at Scale*
- Sentiment Analysis in Telugu
- Lexical Resources linked to Word Sense Embeddings
- Embeddings Transfer
- Similarity Learning and Retrieval in Asymmetric Texts

SemDeep-4 @ ISWC:

- KeyNote: Marco Rospocher: *Neural Ontology Learning*
- Joint Text and Knowledge Graph Embeddings
- Image-based Profiling of User's Interests
- Link Prediction
- Joint Ontology- and Deep Learning-based document annotation

What else has happened?

SemDeep special issue at Semantic Web Journal to be published later 2019:

Bassem Makni and James Hendler:

Deep learning for noise-tolerant RDFS reasoning

Marjan Alirezaie, Martin Långkvist, Michael Sioutis, and Amy Loutfi:

Semantic Referee: A Neural-Symbolic Framework for Enhancing Geospatial Semantic Segmentation

José Manuel Gómez-Pérez and Ronald Denaux:

Vecsigrafo: Corpus-based Word-Concept Embeddings - Bridging the Statistic-Symbolic Representational Gap in Natural Language Processing

Armand Vilalta, Dario Garcia-Gasulla, Ferran Parés, Eduard Ayguadé, Jesus Labarta, E Ulises Moya-Sánchez, and Ulises Cortés:

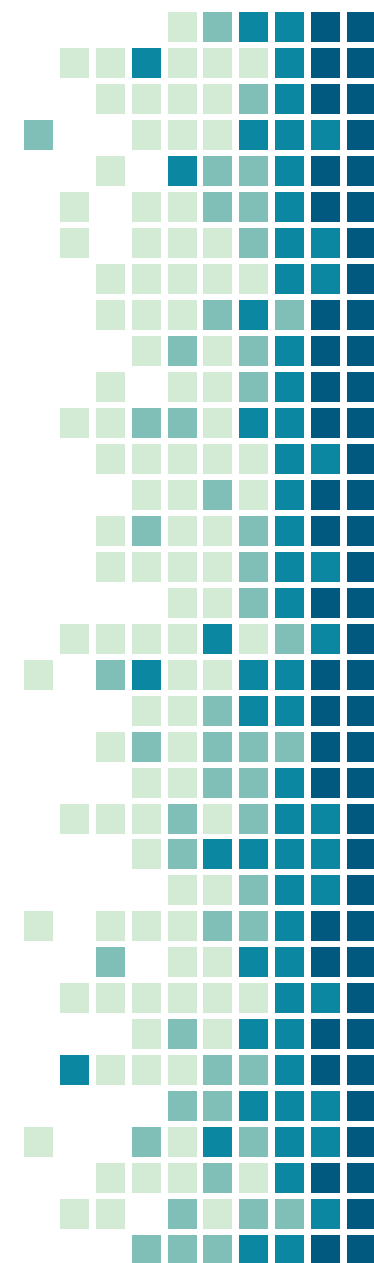
Studying the Impact of the Full-Network Embedding on Multimodal Pipelines

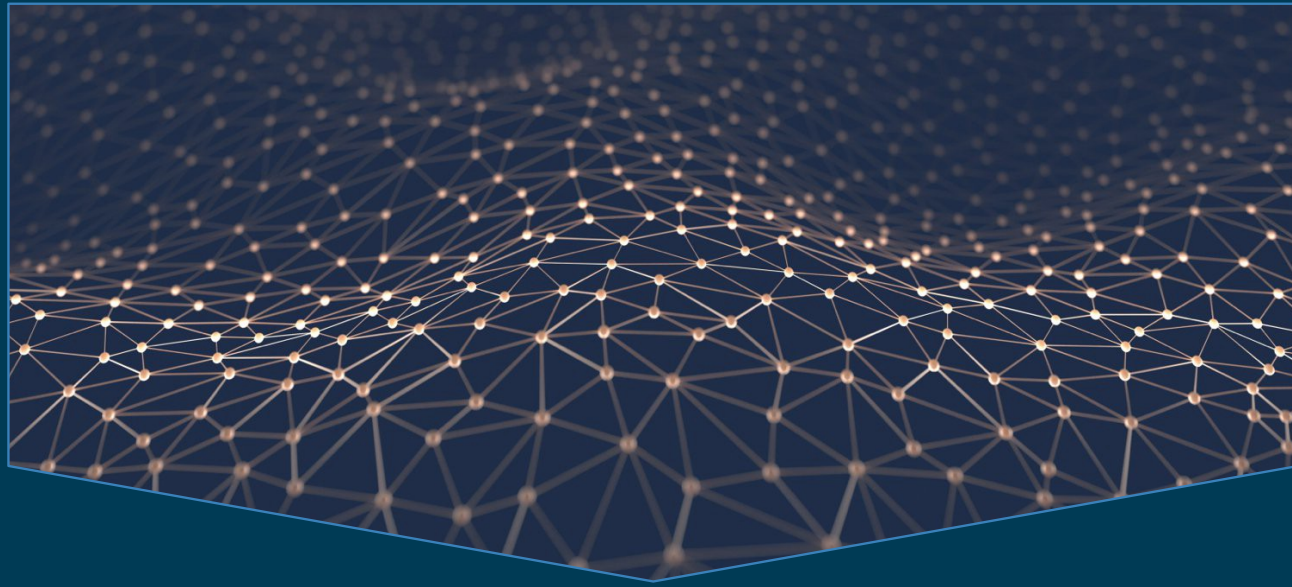
Ziqi Zhang and Lei Luo:

Hate Speech Detection: A Solved Problem? The Challenging Case of Long Tail on Twitter

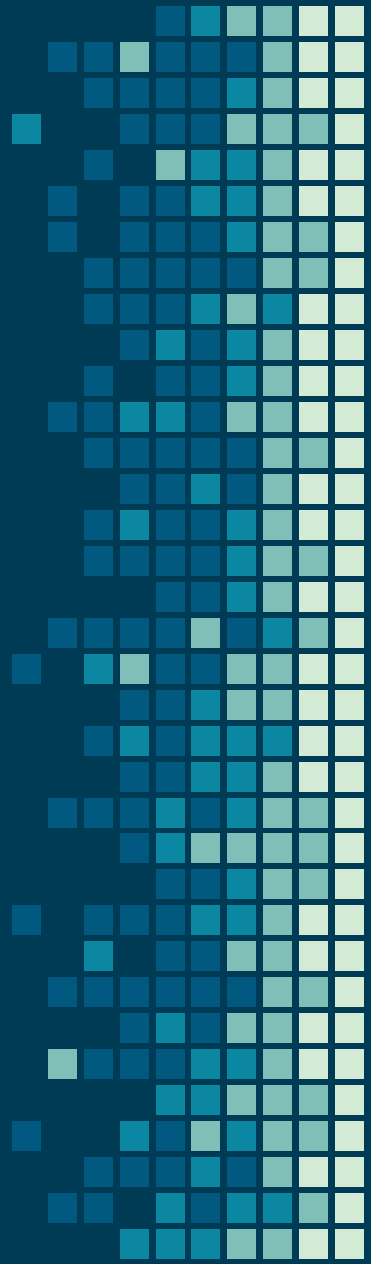
Dai Quoc Nguyen, Dat Quoc Nguyen, Tu Dinh Nguyen, and Dinh Phung:

A Convolutional Neural Network-based Model for Knowledge Base Completion and Its Application to Search Personalization



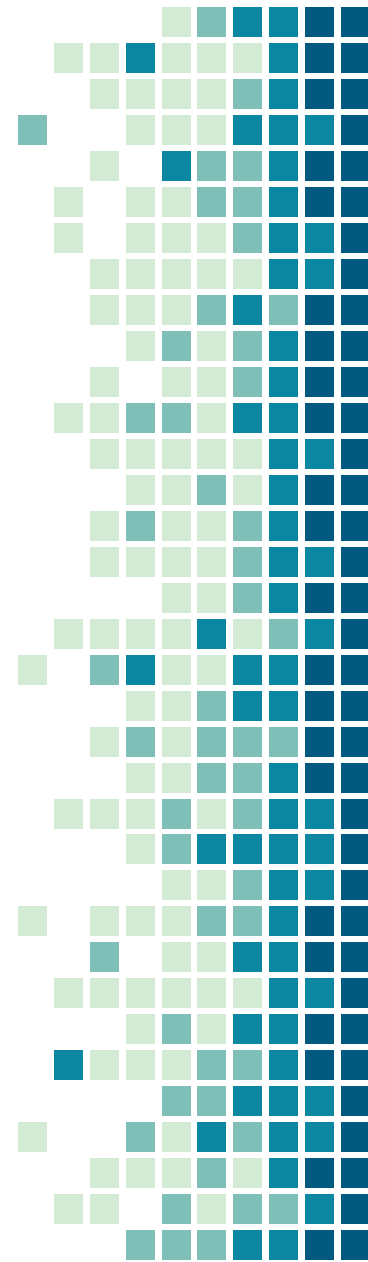


SemDeep-5



SemDeep-5 Program

- 14:10 - 14:35 Word-in-Context (WiC) challenge
- 14:35 - 14:50 Daniel Loureiro and Alípio Mário Jorge: **LIAAD at SemDeep-5 Challenge: Word-in-Context (WiC)**
- 14:50 - 15:05 Alan Ansell, Felipe Bravo-Marquez and Bernhard Pfahringer: **An ELMo-inspired approach to SemDeep-5's WiC task**
- 15:05 - 15:30 Dingmin Wang, Meng Fang, Yan Song and Juntao Li: **Bridging the Gap: Improve Part-of-speech Tagging for Chinese Social Media Texts with Foreign Words**
- 15:30 - 16:00 Coffee break
- 16:00 - 16:15 Asan Agibetov, Georg Dorffner and Matthias Samwald: **Using hyperbolic large-margin classifiers for biological link prediction**
- 16:15 - 16:40 Yilun Zhou, Julie A. Shah and Steven Schockaert: **Learning Household Task Knowledge from WikiHow Descriptions**
- 16:40 - 17:05 Simone Magnolini, Valerio Piccioni, Vevake Balaraman, Marco Guerini and Bernardo Magnini: **How to Use Gazetteers for Entity Recognition with Neural Models**
- 17:05 - 17:30 Jayati Deshmukh, Annervaz KM and Shubhashis Sengupta: **A Sequence Modeling Approach for Structured Data Extraction from Unstructured Text**
- 17:30 - 17:55 Fabian Hommel, Matthias Orlikowski, Philipp Cimiano and Matthias Hartung: **Extending Neural Question Answering with Linguistic Input Features**
- 17:55 - 18:00 Closing remarks



PROGRAM COMMITTEE

Marianna Apidianaki, LIMSI-CNRS, Orsay Cedex, France

Miguel Ballesteros, IBM T.J. Watson Research Center, Yorktown Heights, NY, USA

Michael Cochez, RWTH University Aachen, Germany

Christos Christodoulopoulos, Amazon Research Cambridge, UK

Agata Filipowska, Poznan University of Economics and Business, Poland

Dario Garcia-Casulla, Barcelona Supercomputing Center (BSC), Barcelona, Spain

Jorge Gracia Del Río, Ontology Engineering Group, UPM, Spain

Víctor Gutiérrez Basulto, Cardiff University, Cardiff, UK

Wei Hu, Nanjing University, China

Stratos Kontopoulos, Multimedia Knowledge & Social Media Analytics Laboratory, Thessaloniki, Greece

Brigitte Krenn, Austrian Research Institute for AI, Vienna, Austria

John McCrae, Insight Centre for Data Analytics, Galway, Ireland

José Moreno, Universite Paul Sabatier, IRIT, Toulouse, France

Luis Nieto Piña, University of Goteborg, Goteburg, Sweden

Sergio Oramas, Universitat Pompeu Fabra, Barcelona, Spain

Carla Perez Almendros, Cardiff University, Cardiff, UK

Alessandro Raganato, University of Helsinki, Helsinki, Finland

Simon Razniewski, Max-Planck-Institute, Germany

Martin Riedl, Stuttgart University, Germany

Francois Scharffe, Columbia University, New York, USA

Michael Spranger, Sony Computer Science Laboratories Inc., Tokyo, Japan

Steven Schockaert, Cardiff University, United Kingdom

Víctor Gutiérrez Basulto, Cardiff University, United Kingdom

Arkaitz Zubiaga, University of Warwick, United Kingdom



Let's get the WS started!

Hashtag #semdeep5
(@IJCAIconf, etc.)

