

Reader for the Course

“Ontologies and Lexical Semantics in Natural Language Understanding”

**European Summer School on
Logic, Language and Information
(ESSLLI 2007)**

Dublin, 6th - 17th August, 2007

Paul Buitelaar, Philipp Cimiano

Ontologies

Introduction to Ontologies

N.F. Noy and D.L. McGuinness, *Ontology Development 101: A Guide to Creating Your First Ontology*, Stanford Knowledge Systems Laboratory Technical Report [KSL-01-05](#) and Stanford Medical Informatics Technical Report SMI-2001-0880, March 2001.

http://protege.stanford.edu/publications/ontology_development/ontology101-noy-mcguinness.html

Foundational / Upper level Ontologies

Guarino, N. *Formal Ontology and Information Systems*. In N. Guarino, editor, *Proceedings of the 1st International Conference on Formal Ontologies in Information Systems, FOIS'98, Trento, Italy*, pages 3-- 15. IOS Press, June 1998.

<http://www.loa-cnr.it/Papers/FOIS98.pdf>

C. Masolo, S. Borgo, A. Gangemi, N. Guarino and A. Oltramari, *“Ontology Library (final)” WonderWeb Deliverable D18*, December 2003.

<http://wonderweb.semanticweb.org/deliverables/documents/D18.pdf>

Introduction to Semantic Web

T Berners-Lee, J Hendler, O Lassila The semantic Web - Scientific American Magazine, 2001

http://www.sciamdigital.com/index.cfm?fa=Products.ViewIssuePreview&ARTICLEID_CHAR=5704DA3F-F381-40DD-ABB2-52EC0A2A748

see also: <http://www.w3.org/2000/Talks/1206-xml2k-tbl/slide2-0.html>

Semantic Web Languages

RDF

D. Brickley and R.V Guha, RDF Vocabulary Description Language 1.0: RDF Schema, W3C Recommendation, February 2004

<http://www.w3.org/TR/rdf-schema/>

P. Hayes, RDF Semantics, W3C Recommendation, February 2004.

<http://www.w3.org/TR/rdf-mt/>

OWL

D.L. McGuinness, F. van Harmelen, OWL Web Ontology Language Overview, W3C Recommendation, February 2004

<http://www.w3.org/TR/owl-features/>

DAML+OIL

I. Horrocks, "DAML+OIL: A Description Logic for the Semantic Web". *IEEE Bulletin of the Technical Committee on Data Engineering*, 2002.

<http://www.cs.man.ac.uk/~horrocks/Publications/download/2002/ieeede2002.pdf>

Ontologies and Lexical Semantics

WordNet

Miller, George A., Christiane Fellbaum, Katherine J. Miller. Five papers on WordNet.

http://www.cfilt.iitb.ac.in/archives/english_wordnet_5papers.pdf

FrameNet

J. Scheffczyk, C. F. Baker, and S. Narayanan. 2006. Ontology-based reasoning about lexical resources. In Proc. of OntoLex 2006: Interfacing Ontologies and Lexical Resources for Semantic Web Technologies, Genoa, Italy.

http://www.icsi.berkeley.edu/~snarayan/fn_reasoning.pdf

The Generative Lexicon

James Pustejovsky "The Generative Lexicon", Computational Linguistics, 17(4), pp. 409-441, 1991

<http://citeseer.ist.psu.edu/pustejovsky91generative.html>

Corelex

Paul Buitelaar, "CoreLex: An Ontology of Systematic Polysemous Classes" In: Formal Ontology in Information Systems. Proceedings of FOIS'98, Trento, Italy, June 6-8, 1998. IOS Press, Amsterdam, 1998.

<http://dfki.de/~paulb/fois98.pdf>

LingInfo

Paul Buitelaar, Thierry Declerck, Anette Frank, Stefania Racioppa, Malte Kiesel, Michael Sintek, Ralf Engel, Massimo Romanelli, Daniel Sonntag, Berenike Loos, Vanessa Micelli, Robert Porzel, Philipp Cimiano In: Proc. of OntoLex06, a Workshop at LREC, Genoa, Italy, May 2006.

<http://www.dfki.de/~paulb/OntoLex2006.pdf>

Ontology-based NLP

Ontological Semantics

S. Nirenburg and V. Raskin, „Ontological Semantics“, MIT Press, 2004.

Moreno Ortiz, A., V. Raskin, and S. Nirenburg (2002) New Developments in Ontological Semantics. In: Proceedings of the Third International Conference on Language Resources and Evaluation (LREC 2002). Las Palmas de Gran Canaria, Spain. May 29-31, pp. 1196--1202.

<http://ilit.umbc.edu/SergeiPub/NewDevelopmInOntol02.pdf>

Question Answering Systems

P. Cimiano, P. Haase, J. Heizmann. „Porting Natural Language Interfaces between Domains- An Experimental Study with the ORAKEL System, Proceedings of the International Conference on Intelligent User Interfaces, 2007.

<http://www.aifb.uni-karlsruhe.de/WBS/pci/iui07.pdf>

Anette Frank, Hans-Ulrich Krieger, Feiyu Xu, Hans Uszkoreit, Berthold Crysmann, Brigitte Jörg and Ulrich Schäfer, Querying Structured Knowledge Resources, "Querying Structured Knowledge Sources", *Proceedings of AAAI-05, Workshop on Question Answering in Restricted Domains*, Pittsburgh, Pennsylvania, pp. 10-19.

<http://www.dfki.de/~frank/papers/ws1305FrankA.pdf>

V. Lopez and E. Motta, „Ontology-Driven Question Answering in AquaLog“, Proceedings of the International Conference on Natural Language for Information Systems (NLDB), pp. 89–102, 2004.

<http://kmi.open.ac.uk/publications/pdf/kmi-04-5.pdf>

A. Popescu, O. Etzioni and H. Kautz, „Towards a Theory of Natural Language Interfaces to Databases“, Proceedings of the International Conference on Intelligent User Interfaces (IUI'03), pp. 149-157.

<http://turing.cs.washington.edu/papers/nli-iui03.pdf>

Ontologies for Discourse Processing

Bridging

N. Asher and A. Lascarides, „Bridging“, Journal of Semantics, 15, pp. 83-113, 1999.

<http://citeseer.ist.psu.edu/25123.html>

Model Building

P. Cimiano, “Building Models for Bridges“, Proceedings of the 4th International Workshop on Inference in Computational Semantics (ICOS-4), 2004.

http://www.aifb.uni-karlsruhe.de/WBS/pci/icos4_bridging.pdf

A first-order account of the relation between bridges, discourse relations and world knowledge, Technical Report , Institute AIFB, University of Karlsruhe. March 2006.

<http://www.aifb.uni-karlsruhe.de/WBS/pci/bridging.pdf>

Pattern-based learning of (ontological) relations

M.A. Hearst, Automatic Acquisition of Hyponyms from Large Text Corpora. In: Proceedings of the 14th International Conference on Computational Linguistics, pp. 539-545, 1992.

<http://citeseer.ist.psu.edu/hearst92automatic.html>

E. Charniak, M. Berland. Finding parts in very large corpora. In: Proceedings of the 37th Annual Meeting of the ACL, pp. 57-64, 1999.

<http://citeseer.ist.psu.edu/berland99finding.html>

P. Cimiano and J. Wenderoth, Automatic Acquisition of Ranked Qualia Structures from the Web, In: Proceedings of the Annual Meeting of the ACL, 2007.

<http://www.aifb.uni-karlsruhe.de/WBS/pci/qualia@acl07.pdf>

M. Poesio, A. Almuhareb. Identifying Concept Attributes Using A Classifier. In: Proceedings of the ACL Workshop on Deep Lexical Acquisition, pp. 18-27, 2005.

<http://acl.ldc.upenn.edu/W/W05/W05-1003.pdf>

J. Völker, D. Vrandečić, Y. Sure, A. Hotho, „Learning Disjointness“, Proceedings of the 4th European Semantic Web Conference (ESWC'07), pp. 175-189, 2007.

http://www.aifb.de/WBS/jvo/publications/disjointness_2007.pdf

Temporal Ontology

J. Allen and G. Ferguson, „Actions and events in temporal logic“, Journal of Logic Computation 4, pp. 531-579, 1994.

<http://citeseer.ist.psu.edu/allen94actions.html>

M. Moens and M. Steedman, „Temporal ontology and temporal reference“, Computational Linguistics, 1988.

<http://citeseer.ist.psu.edu/moens03temporal.html>

NLP in Ontology Development

Ontoselect

Paul Buitelaar, Thomas Eigner, Thierry Declerck OntoSelect: A Dynamic Ontology Library with Support for Ontology Selection In: Proc. of the Demo Session at the International Semantic Web Conference, Hiroshima, Japan, Nov. 2004.

<http://www.dfki.de/~paulb/iswc04.demo.OntoSelect.pdf>

OntoSelect is available at: <http://olp.dfki.de/ontoselect/>

Introduction to Ontology Learning from Text

Paul Buitelaar, Philipp Cimiano, Bernardo Magnini Ontology Learning from Text: An Overview In: Paul Buitelaar, Philipp Cimiano, Bernardo Magnini (eds.) Ontology Learning from Text: Methods, Evaluation and Applications Frontiers in Artificial Intelligence and Applications Series, Vol. 123, IOS Press, July 2005.

<http://www.dfki.de/~paulb/OL-Book-Intro.pdf>

Ontology Learning Tools

OntoLT

Paul Buitelaar, Daniel Olejnik, Michael Sintek, A Protégé Plug-In for Ontology Extraction from Text Based on Linguistic Analysis In: Proceedings of the 1st European Semantic Web Symposium (ESWS), Heraklion, Greece, May 2004.

<http://dfki.de/~paulb/esws04.pdf>

RelExt

Alexander Schutz, Paul Buitelaar RelExt: A Tool for Relation Extraction in Ontology Extension In: Proc. of the 4th International Semantic Web Conference, Galway, Ireland, Nov. 2005.

<http://dfki.de/~paulb/iswc2005.pdf>

Text2Onto

P. Cimiano, J. Völker, Text2Onto - A Framework for Ontology Learning and Data-driven Change Discovery, *Proceedings of the 10th International Conference on Applications of Natural Language to Information Systems (NLDB)*, volume 3513 of Lecture Notes in Computer Science, pp. 227-238. Springer, Alicante, Spain, June 2005.

http://www.aifb.uni-karlsruhe.de/WBS/jvo/publications/Text2Onto_nldb_2005.pdf