

Ekaterina Ovchinnikova



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Research interests

- computational natural language understanding
- human and automated reasoning
- ontologies
- knowledge representation and extraction

Education

- 2007 – 2011** PhD student at the Institute of Cognitive Science, University of Osnabrück, Germany (summa cum laude honor, OLB first prize).
- 2001 – 2002** Exchange student at the Department of Linguistics, University of Tübingen, Germany.
- 1998 – 2003** Master student at the Department of Mathematical, Applied and Computational Linguistic, Saint Petersburg State University, Russia (diploma with distinction).

Professional positions

- 2012 - present** Computer scientist (faculty) at the Information Sciences Institute, University of Southern California, USA.
- 2010, 2011** Visiting researcher at the Information Sciences Institute, University of Southern California, USA.
- 2001 - 2006** Half-time researcher/researcher (HiWi/WiMi) at the University of Tübingen, Germany.

Publications

Inoue, N., E. Ovchinnikova, K. Inui and J. R. Hobbs (2014). Weighted Abduction for Discourse Processing Based on Integer Linear Programming. In *Plan, Activity, and Intent Recognition*, to appear.

Ovchinnikova, E., A. Gordon, J. R. Hobbs (2013). Abduction for Discourse Interpretation: A Probabilistic Framework. In *Proceedings of the Joint Symposium on Semantic Processing*, 42--50.

Gordon, A., Hobbs, J., Ovchinnikova, K., Roemmele, M., and Morency, L. (2013) Abduction of mental states with a formal theory of commonsense psychology. Abstract. *Workshop on Mental model ascription by language-enabled intelligent agents*, July 31, 2013, Berlin, Germany.

Ovchinnikova, E., N. Montazeri, T. Alexandrov, J. R. Hobbs, M. C. McCord and R. Mulkar-Mehta (2013). Abductive Reasoning with a Large Knowledge Base for Discourse Processing. In Hunt, H., Bos, J. and Pulman, S. (eds.) : *Computing Meaning*, vol. 4, pp. 104-124.

Inoue, N., E. Ovchinnikova, K. Inui and J. R. Hobbs (2012). Coreference Resolution with ILP-based Weighted Abduction. In *Proceedings of COLING 2013*, pp.1291-1308.

Peñas, A. and Ovchinnikova, E. (2012) Unsupervised Acquisition of Axioms to Paraphrase Noun Compounds and Genitives. In *Proceedings of the International Conference on Intelligent Text Processing and Computational Linguistics (CICLing)*, Part I, LNCS 7181, pp. 388-401, Springer.

Ovchinnikova, E. (2012) *Integration of World Knowledge for Natural Language Understanding*, Atlantis Press, Springer.

Wandmacher, T., Ovchinnikova, E., Mönnich, U., Michaelis, J. and Kühnberger, K.-U. (2011). Adaptation of Ontological Knowledge from Structured Textual Data. In Mehler, A., Kühnberger, K.-U., Lobin, H., Lungen, H., Storrer, A. and Witt, A. (eds.): *Modeling, Learning, and Processing of Text Technological Data Structures*, pp. 129-153, Springer.

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Ovchinnikova, E., Borgo, S., Oltramari, A., Vieu, L. and Alexandrov, A. (2010). Data-Driven and Ontological Analysis of FrameNet for Natural Language Reasoning. In *Proceedings of the 7th International Conference on Language Resources and Evaluation (LREC)*.

Zock, M., Wandmacher, T. and Ovchinnikova, E. (2010) Are vector-based approaches a feasible solution to the “tip-of-the-tongue” problem? In *eLexicography in the 21st century: New challenges, new applications*, vol. 7, pp. 355-365.

Ovchinnikova, E., Alexandrov, T. and Wandmacher, T. (2009). Automatic acquisition of the argument-predicate relations from a frame-annotated corpus. In *Proceedings of Conference on*

Empirical Methods in Natural Language Processing (EMNLP), pp. 1388-1397.

Wandmacher, T., Ovchinnikova, E. and Alexandrov, T. (2008). Does Latent Semantic Analysis reflect Human Associations? In *Proceedings of the Lexical Semantics workshop at European Summer School in Logic, Language and Information (ESSLLI)*.

Ovchinnikova, E. and Kühnberger, K.-U. (2007). Automatic Ontology Extension: Resolving Inconsistencies. In *GLDV-Journal for Computational Linguistics and Language Technology* 22(2):19-33.

Wandmacher, T., Ovchinnikova, E., Krumnack, U. and Dittmann, H. (2007). Extraction, evaluation and integration of lexical-semantic relations for the automated construction of a lexical ontology. In T. Meyer and A.C. Nayak (eds.): *Proceedings of the Australasian Ontology Workshop (AOW)*, pp. 61-69.

Krumnack, U., Ovchinnikova, E. and Wandmacher, T. (2007). LexO: Constructing a lexical ontology from heterogeneous resources. In *Proceedings of the Lexicon/Ontology Interface Workshop (OntoLex)*.

Kühnberger, K.-U., Wandmacher T., Schwering, A., Ovchinnikova, E., Krumnack, U., Gust, H. & Geibel, P. (2007): I-Cog: A Computational Framework for Integrated Cognition of Higher Cognitive Abilities. In *Proceedings of 6th Mexican International Conference on Artificial Intelligence (MICA)*, LNAI 4827, pp. 203-214, Springer.

Kühnberger, K.-U., Wandmacher, T., Ovchinnikova, E., Krumnack, U., Gust, H. & Geibel, P. (2007): Modeling Human-Level Intelligence by Integrated Cognition in a Hybrid Architecture. In P. Hitzler, T. Roth-Berghofer, S. Rudolph (eds.): *Foundations of Artificial Intelligence (FAInt), Workshop at KI 2007*, CEUR-WS, vol. 277, pp. 1-15.

Mönnich, U., Michaelis, J., Ovchinnikova, E., Wandmacher, T. & Kühnberger, K.-U. (2007). Information Extraction from Annotation Graphs Serving for the Adaptation of Ontologies - Position Paper. In *Proceedings of the Workshop "Learning from Non-Vectorial Data" (LNVD)* held in conjunction with KI 2007, Osnabrück.

Ovchinnikova, E. and Kühnberger, K.-U. (2007). Automatic Ontology Extension: Resolving Inconsistencies - Extended Abstract . In *Proceedings "Ontologies and Text Technology: Approaches to Extract Semantic Knowledge from Syntactic Information"*, PICS, vol. 2007-1, pp. 93-98.

Ovchinnikova, E. and Richter, F. (2007): Morph Moulder: Graphical Software for Teaching and Visualizing Logic for HPSG and Description Logics. In *Logic Journal of IGPL* 15(4):333-345.

Ovchinnikova, E., Wandmacher, T. and Kühnberger, K.-U. (2007): Solving Terminological Inconsistency Problems in Ontology Design. In *the 4th issue of the International Journal of Interoperability in Business Information Systems (IBIS) on Information Modeling and Ontologies* 2(1):65-80.

Azarova, I., Ivanov, V., Ovchinnikova, E. and Sinopalnikova, A. (2006): RussNet as a Semantic Component of the Text Analyser for Russian. In *Proceedings of the Third International WordNet Conference (GWC)*, pp. 19-27.

Azarova, I., Ivanov V. and Ovchinnikova, E. (2006): Inheritance of the Valency Frames in RussNet Thesaurus for the Automatic Text Analysis. In *Computer linguistics and intellectual technologies, Proceedings of the international conference "Dialog"*, pp. 18-25.

Ovchinnikova, E. and Richter, F. (2006): Morph Moulder: Graphical Software for Teaching and Visualizing RSRL and Description Logics. In *Proceeding of the Second International Congress on Tools for Teaching Logic (SICTTL)*, pp. 143-147.

Azarova, I. and Ovchinnikova, E. (2006): Semantic Interpretation of the Noun Phrases in Russian Corpora. In *Proceedings of the International Conference on Corpus Linguistics - 2006*.

Ovchinnikova, E. and Kühnberger, K.-U. (2006). Adaptive ALE-TBox for Extending Terminological Knowledge. In A. Sattar & B. H. Kang (eds.): *Proceedings of the 19th ACS Australian Joint Conference on Artificial Intelligence*, LNAI 4304, Springer, pp. 1111-1115.

Ovchinnikova, E. and Kühnberger, K.-U. (2006). Aspects of Automatic Ontology Extension: Adapting and Regeneralizing Dynamic Updates. In M. Orgun (Hrsg.): *Advances in Ontologies, Proceedings of the Australasian Ontology Workshop (AOW), Conferences in Research and Practice in Information Technology*, vol. 72, pp. 52-60.

Azarova, I., Ivanov, V. and Ovchinnikova, E. (2005): Semantic Structure of the Proposition in the Procedure Extracting Facts from Russian Texts. In Koboseva, Nariniani, Selegea (eds.): *Computer linguistics and intellectual technologies, Proceedings of the international conference "Dialog"*, pp. 6-11.

Richter, F., Ovchinnikova, E., Trawinski, B. and Meurers, D. (2002): Interactive Graphical Software for Teaching the Formal Foundations of Head-Driven Phrase Structure Grammar. In Gerhard Jäger, Paola Monachesi, Gerald Penn, and Shuly Wintner (eds.): *Proceedings of Formal Grammar 2002*, pp. 137-148.

Theses

Ovchinnikova, E. (2011). Integration of Word Knowledge for Natural Language Understanding. PhD thesis, Institute of Cognitive Science, University of Osnabrück.
Advisor: Prof. Dr. Kai-Uwe Kühnberger

Ovchinnikova, E. (2003). Interactive graphical visualization of the mathematical foundations of the formal grammars . Diploma thesis, Department of Mathematical, Applied and Computational Linguistics, St.Petersburg State University.
Advisor: Dr. Irina V. Azarova.

Projects

current

Metaphor Interpretation for Cultural Schemas, USC/ISI, USA

Heider-Simmel Interactive Theater, USC/ISI, USA

Photo Identification of Whales

past

Machine Reading, USC/ISI, USA

Adaptive Ontologies on extreme Markup Structures, University of Tübingen, Germany

Distributional Idiosyncrasies, SFB 441 at the University of Tübingen, Germany

Grammar Formalisms and Parsing, Department of Linguistics, University of Tübingen, Germany

Teaching

Concepts and Words: Theoretical and Empirical Perspectives

Interdisciplinary seminar, University of Osnabrück

Teacher

Lexicons and Ontologies

Independent Study Course, University of Osnabrück

Teacher

Grammar Formalisms and Parsing

Lectures and Seminar, University of Tübingen

Teaching Assistant

Language skills

Russian (native), English (fluent), German (fluent), Italian (conversational), Spanish (beginner)

Programming and web-oriented skills

Java, Python, Perl, Prolog, OWL and other Semantic-Web-related standards, XML, HTML, JavaScript

Scholarships and awards

The PhD project won the OLB first prize (<https://www.olb.de/dieolb/16532.php>) (5.000 Euro award)

The PhD project was supported by a 3-year scholarship from the German Academic Exchange Service (DAAD).

References

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