DR EKATERINA VYLOMOVA

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WORK RIGHTS

Australian Visa 485 (expires 16 September 2023), waiting for 190 (PR, state nominated skilled migration; ANZSCO Code: 261313; Occupation: Software Engineer)

KEY SKILLS

Natural language processing, computational linguistics (morphology), machine learning (incl. deep learning), teaching STEM courses
Main tools & utils: python, R, bash tools, C++

EDUCATION

The University of Melbourne *Novermber 2014 – November 2018*
PhD Student in Computer Science, first class honours
Thesis: Compositional Morphology Through Deep Learning

Bauman Moscow State Technical University *June 2011*
M.Sc. in Computer Science & Engineering
Thesis: Neural modelling of verbal consciousness based on the results of associative experiments, Excellent(5)
Overall GPA: 4.9 out of 5

Moscow Institute of Physics and Technology (State University) *June 2009*
Additional (M.Sc.) education, Machine Learning & Data Mining
Overall GPA: 5 out of 5

Bauman Moscow State Technical University *June 2009*
B.Sc. in Computer Science & Engineering
Thesis:System for Semiographic Chants Recognition, Excellent(5)
Overall GPA: 3.8 out of 5

TECHNICAL SKILLS SET

Operating Systems	Ubuntu 8–17, Windows Family
Programming Languages	Python, R, C#/C++, SQL
Frameworks	.Net Framework($\leq$ 3.0), Django, DyNet/Tensorflow (Deep Learning)
DBMS	PostgreSQL, MySQL
Math & other tools	R, Weka, awk, sed
Spoken languages	Russian (native), English (upper inter.), Hebrew, Bulgarian, French (basic)

LATEST AWARDS & GRANTS

Google PhD Fellowship *2017*
Research support
The University of Melbourne *2017*
Travelling Scholarship (for EACL'17)
The University of Melbourne *2017*
Excellent in Tutoring Award
University of Washington *2015*
Scholarship for participation in Jelinek Summer Workshop on Speech and Language Technology

The University of Melbourne *2014*
PhD Program scholarship
Carnegie Mellon University *2014*
Scholarship for participation in ACL'14 conference
The Fulbright Program *2013*
Visiting Graduate Student
Russian Foundation for Humanities *2012*
Grant 12-04-12039B, Information system for cognitive experiments
ABBYY company *2012*
Finalist of ABBYY translation cup
Moscow University of Printing Arts *2012*
Young Lecturer Award
Russian Foundation for Humanities *2012*
Grant 11-04-12025, Automated system for scientific research in the area of computational semiography
University of Texas, Austin *2012*
Scholarship for participation & accommodation in NASSLLI-2012

EXPERIENCE

University of Melbourne Mar, 2019 - May, 2020
Postdoctoral Fellow *Melbourne, Australia*

· Quantitative analysis of a corpus of psychology journals 1930–2017: analysis of topics being discussed at each period
· Development of models of diachronic concept change (to what extent "trauma", "addiction", "harm" changed since 1960s)
· Development of methods to measure semantic breadth of concepts and to automatically detect its change
· Investigating how neuroscience influenced certain fields of psychology
· Improvement of existing diachronic models

University of Melbourne Mar, 2015 - Jun, 2019
Tutor and Demonstrator *Melbourne, Australia*

· Running weekly workshops for "Statistical Machine Learning" course (2018): advanced machine learning (PGMs, Bayesian inference, SVMs). Implementing models using Jupyter notebooks
· Running weekly workshops for "Web Search and Text Analysis" course (2018, 2019): advanced machine learning and NLP approaches (LDA, HMMs, Neural MT). Implementing models using Jupyter notebooks
· Running weekly workshops for "Knowledge Technologies" course (2016-2019): basics of information retrieval and machine learning
· Running weekly labs and workshops for "Database Systems and Information Modelling" (2015-2019): ER-modelling and SQL

Kaspersky Labs Oct, 2016 - Sept, 2017
Researcher *Moscow, Russia, remote*

· Organization description: Information security
· Kids protection project. Developing algorithms for adult content identification
· Tools: regular expressions, sed, awk, grep, corpus analysis, python

Kaspersky Labs Jun, 2013 - Oct, 2016
Spam analyst *Moscow, Russia, remote*

· Organization description: Information security
· E-mail spam filtering and its automation using machine learning techniques
· Tools: regular expressions, sed, awk, grep, corpus analysis, python

Montclair State University Jan, 2014 - Oct, 2014
Visiting Researcher *Montclair, USA*

· Research in figurative language and automatic detection of non-compositionality in texts (idioms and metaphors)
· Several tutorials on natural language processing and Russian language

Moscow State University of Printing Arts Sept, 2011 - Jun, 2012
Lecturer *Moscow, Russia*

· Running lectures and practical workshops for "Information systems design and operation", "Relational algebra"
· Tools: Django, Python, SQL

Yandex Corp. Sept, 2009 - May, 2011
Web Spam Analyst *Moscow, Russia*

· Organization description: Web search
· Detection of different types of web-spam: doorways, link spam, content spam.
· Analysis of possible features for automated systems of spam detection (using ML). Developed a methodology to identify synonymized texts and measure texts similarity.
· Tools: Python, awk, sed, grep, R

Parallels, Inc. Oct, 2006 - Apr, 2008
Software Developer *Moscow, Russia*

· Organization description: Software virtualization, hosting and cloud service provider
· Development of automated testing system for Virtuozzo project (Virtual containers)·
· Tools: C#, NHibernate, PostgreSQL, ASP.Net

Diasoft, Jsc. Aug, 2005 - Jun, 2006
Software Developer *Moscow, Russia*

· Organization description: Banking systems
· Development of automated testing system for Diasoft 5NT banking system
· Tools: VB .Net, C#

Parascript, LLC. Aug, 2003 - May, 2004
QA *Moscow, Russia*

· Organization description: UPS automatic sorting system
· Evaluation of handwritten automatic text recognition (OCR system for postal services)

CONFERENCE REVIEWING

ACL (2016–), EACL (2017–), LREC(2018–), CoNLL (2016–), COLING (2016–), AIST (2015–), WMT (2018–), NAACL (2018–), EMNLP(2016–2018), SCLeM (2017), TyP-NLP (2019), *SEM (2019), LChange (2019)

PUBLICATIONS

Google scholar profile: `https://scholar.google.com.au/citations?user=JlVHhVUAAAAJ&hl=en`

Gorman K., McCarthy A., Cotterell R., **Vylomova E.**, Silfverberg M., Markowska M. 2019. *Weird Inflects but OK: Making Sense of Morphological Generation Errors.* To appear at CoNLL, Hong Kong

McCarthy A., **Vylomova E.**, Wu S., Malaviya C., Wolf-Sonkin L., Nicolai G., Kirov C., Silfverberg M., Mielke S., Heinz J., Cotterell R., Hulden M. 2019. *The SIGMORPHON 2019 Shared Task: Morphological Analysis in Context and Cross-Lingual Transfer for Inflection.* In Proceedings of the 16th Workshop on Computational Research in Phonetics, Phonology, and Morphology, ACL, Florence, Italy

Vylomova E., Murphy S., Haslam N. *Evaluation of Semantic Change of Harm-Related Concepts in Psychology.* 2019. In Proceedings of the 1st International Workshop on Computational Approaches to Historical Language Change, ACL, Florence, Italy

Dubossarsky H., McCarthy A., Ponti E., Vulić I., **Vylomova E.**, Berzak Y., Cotterell R., Faruqui M., Korhonen A., Reichart R. 2019. *Proceedings of TyP-NLP: The First Workshop on Typology for Polyglot NLP.*, ACL, Florence, Italy

Vylomova E., Cotterell R., Baldwin T., Cohn T., Eisner J. 2019. *Contextualization of Morphological Inflection.* In Proceedings of the 2019 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, Volume 1 (Long and Short Papers), Minnesota, USA

Cotterell R., Kirov C., Sylak-Glassman J., Walther G., **Vylomova E.**, McCarthy A., Kann K., Mielke S., Nicolai G., Silfverberg M., Yarowsky D., Eisner J., Hulden M. 2018. *The CoNLL–SIGMORPHON 2018 Shared Task: Universal Morphological Reinflection.*, Brussels, Belgium

Kirov C., Cotterell R., Sylak-Glassman J., Walther G., **Vylomova E.**, Xia P., Faruqui M., Mielke S., McCarthy A., Kbler S., Yarowsky D., Eisner J., Hulden M. 2018. *UniMorph 2.0: Universal Morphology.* In Proceedings of Language Resources and Evaluation (LREC), Miyazaki, Japan

Cotterell R., Khayrallah H., **Vylomova E.**, Kirov C., Yarowsky D. 2017. *Paradigm Completion for Derivational Morphology.* In Proceedings of Empirical Methods of Natural Language Processing (EMNLP), Copenhagen, Denmark

Vylomova E., Shcherbakov A., Philippovich Yu., Cherkasova G. 2017. *Men Are from Mars, Women Are from Venus: Evaluation and Modelling of Verbal Associations.* Analysis of Images, Social Networks and Texts - Sixth International Conference (AIST), Moscow, Russia

Cotterell R., Kirov C., Sylak-Glassman J., Walther G., **Vylomova E.**, Xia P., Faruqui M., Kubler S., Yarowsky D., Eisner J., Hulden M. 2017. *CoNLL-SIGMORPHON 2017 Shared Task: Universal Morphological Reinflection in 52 Languages.* In Proceedings of the CoNLL SIGMORPHON 2017 Shared Task: Universal Morphological Reinflection, CoNLL, Vancouver, Canada

Vylomova E., Cotterell R., Baldwin T., Cohn T. 2017. *Context-Aware Prediction of Derivational Word-forms.* In Proceedings of European Chapter of the ACL (EACL), Valencia, Spain

Shcherbakov A., **Vylomova E.**, Thieberger N. 2016. *Phonotactic Modeling of Extremely Low Resource Languages.* In Proceedings of Australasian Language Technology Association Workshop (ALTA), Melbourne, Australia

Vylomova E., Rimell L., Cohn T., Baldwin T. 2016. *Take and Took, Gaggle and Goose, Book and Read: Evaluating the Utility of Vector Differences for Lexical Relation Learning.* In Proceedings of ACL-2016, Berlin, Germany

Scherbakov A., **Vylomova E.**, Liu F., Baldwin T. 2016. *SemEval 2016, Task 10: From Incremental Meaning to Semantic Unit (phrase by phrase).* NAACL-16, San Diego, USA

Cohn T., Hoang C.V.,**Vylomova E.**, Yao K., Dyer C., Haffari G. 2016. *Incorporating Structural Alignment Biases into an Attentional Neural Translation Model.* In Proceedings of NAACL-16, 2016. San Diego, USA

Yao K., Cohn T., **Vylomova E.**, Duh K., Dyer C. 2015. *Depth-Gated LSTM.* Jelinek Summer Workshop on Speech and Language Technology, July - August 2015, Seattle, WA, USA

Peng J., Feldman A., **Vylomova E.** 2014. *Classifying Idiomatic and Literal Expressions Using Topic Models and Intensity of Emotions.* In Proceedings of the 2014 Conference on Empirical Methods in Natural Language Processing, EMNLP 2014, October 25-29, 2014, Doha, Qatar

Vylomova E., Philippovich A., Danshina M., Golubeva I., Philippovich Yu. 2014. *Neural Models for Recognition of Basic Units of Semiographic Chants.* Analysis of Images, Social Networks and Texts - Third International Conference, AIST 2014, Yekaterinburg, Russia, April 10-12, 2014, Revised Selected Papers, 249-254

Vylomova E. 2013. *Structural characteristics of Russian associative network.* Proceedings of 10th International Congress of the International Society of Applied Psycholinguistics, June 26-29 2013

Vylomova E. 2012. *Usage of associative thesauri for solving tasks related to the tip of the tongue phenomenon.* Poster paper, 6th Russian Summer School on Information Retrieval, Yaroslavl, August 6-10 2012

Vylomova E., Philippovich Yu., 2012. *Neural network model of verbal associative network.* Conference Language in culture and society, Peoples Friendship University of Russia, Moscow (in Russian)

Vylomova E. 2012. *Analysis of associative thesauri and their application in problems of machine translation.* Conference AIST - Analyses of images, networks and texts, Ekaterinburg, March 16-18 (in Russian)

REFERENCES

Feel free to request a reference from my PhD supervisors from The University of Melbourne: Tim Baldwin (tb@ldwin.net), Trevor Cohn (tcohn@unimelb.edu.au) and my colleague Ryan Cotterell from The University of Cambridge (Assistant Professor; ryan.cotterell@gmail.com).

CERTIFICATIONS

Stanford online courses (http://ai-class.org)
Introduction to Artificial Intelligence

Brainbench (http://brainbench.com)
C#

NeuroProject (http://neuroproject.ru)
Neural Networks and Genetic Algorithms

Parascript, LLC
Pattern recognition and machine learning

Internet University (http://intuit.ru)
Object Oriented Programming

Internet University (http://intuit.ru)
Neural Networks

MISC.

Volunteer editor at "Serious Science", the project explaining scientific research and how it's done. Please see the following examples on Australian languages http://serious-science.org/australian-languages-7356, Hebrew http://serious-science.org/hebrew-8705, or the Kuiper Belt http://serious-science.org/kuiper-belt-6274

Playing Russian intellectual games "What? Where? When?"

Organizer of math games for 5-7 year-old children in Melbourne (at no cost)