Maria Ryskina

Carnegie Mellon University
School of Computer Science
Language Technologies Institute
5000 Forbes Ave, Pittsburgh, PA 15213

mryskina@cs.cmu.edu
http://www.cs.cmu.edu/~mryskina/

Education

Carnegie Mellon University, USA
Ph.D. student, Language and Information Technologies 2016 – present
Advisors: Matthew R. Gormley, Eduard Hovy, Taylor Berg-Kirkpatrick

Skolkovo Institute of Science and Technology, Russia
M.Sc., Information Technology, with honors 2014 – 2016

Moscow Institute of Physics and Technology, Russia
Department of Control and Applied Mathematics
M.Sc., Applied Mathematics and Physics, with honors 2014 – 2016
B.Sc., Applied Mathematics and Physics, with honors 2010 – 2014

Research

Carnegie Mellon University 2016 – present
Graduate Research Assistant *Pittsburgh, PA*

- My research focuses on building computational models of non-standard orthographic, morphological, and lexical choices in written language, both as user-specific idiosyncrasies and through the lens of large-scale language change.

Advisors: Matthew R. Gormley, Eduard Hovy, Taylor Berg-Kirkpatrick

Massachusetts Institute of Technology Sep 2015 – Jan 2016
Visiting Graduate Student, CSAIL Infolab *Cambridge, MA*

- Master's thesis project: detecting paraphrases by sampling visual representations of sentences from a video description model and evaluating similarity between them.

Mentors: Boris Katz, Andrei Barbu

Moscow Institute of Science and Technology 2013 – 2014
Undergraduate Student, Intelligent Systems Subdept. *Moscow, Russia*

- Bachelor thesis project: increasing interpretability and stability of topic models by adding a human-informed regularizer.

Advisor: Konstantin Vorontsov

Work Experience

DiDi Labs, www.didi-labs.com May 2020 – Aug 2020
Reseacrch Intern *Remote*

- Used reinforcement learning to train task-oriented dialog agents in a self-play setting.

Mentor: Kevin Knight

Anti-Plagiat JSC, www.antiplagiat.ru Jun 2015 – Aug 2015
Reseacrch Intern *Moscow, Russia*

- Designed evaluation methods to measure topic search quality in the Russian State Library archives.

Awards and Honors

Diverse Intelligences Summer Institute Fellowship 2021
Templeton World Charity Foundation

Skoltech Academic Excellence Award, Russia 2016
Awarded to Skoltech students graduating with 4.0 GPA

State Academic Scholarship for research achievements, Russia 2013 – 2014

Abramov-Frolov Scholarship for academic achievements, Russia 2010 – 2012
Charitable Foundation for the Development of Innovation Education

Publications

* denotes equal contrubution

Learning Mathematical Properties of Integers
M. Ryskina, K. Knight
BlackboxNLP *Workshop on Analyzing and Interpreting Neural Networks for NLP*, 2021.

Comparative Error Analysis in Neural and Finite-state Models for Unsupervised Character-level Transduction
M. Ryskina, E. Hovy, T. Berg-Kirkpatrick, M. Gormley
SIGMORPHON *Workshop on Computational Research in Phonetics, Phonology, and Morphology*, 2021.

NoiseQA: Challenge Set Evaluation for User-Centric Question Answering
A. Ravichander, S. Dalmia, **M. Ryskina**, F. Metze, E. Hovy, A. Black
*Conference of the European Chapter of the Association for Computational Linguistics (**EACL**)*, 2021.

Phonetic and Visual Priors for Decipherment of Informal Romanization
M. Ryskina, M. Gormley, T. Berg-Kirkpatrick
*Annual Meeting of the Association for Computational Linguistics (**ACL**)*, 2020.

Where New Words Are Born: Distributional Semantic Analysis of Neologisms and Their Semantic Neighborhoods
M. Ryskina, E. Rabinovich, T. Berg-Kirkpatrick, D. Mortensen, Y. Tsvetkov
*Annual Meeting of the Society for Computation in Linguistics (**SCiL**)*, 2020.

OPERA: Operations-oriented Probabilistic Extraction, Reasoning, and Analysis (2019 system report)
E. Hovy, J. Carbonell, H. Chalupsky, A. Gershman, A. Hauptmann, F. Metze, T. Mitamura, Z. Sheikh, A. Dangi, A. Chaudhary, X. Chen, X. Kong, B. Huang, S. Medina, H. Liu, X. Ma, **M. Ryskina**, R. Sanabria, V. Gangal
*Text Analysis Conference (**TAC**)*, 2019.

OPERA: Operations-oriented Probabilistic Extraction, Reasoning, and Analysis (2018 system report)
E. Hovy, T. Berg-Kirkpatrick, J. Carbonell, H. Chalupsky, A. Gershman, A. Hauptmann, F. Metze, T. Mitamura, A. Chaudhary, X. Chen, B. Huang, H. Liu, X. Ma, S. Palaskar, D. Rajagopal, **M. Ryskina**, R. Sanabria
*Text Analysis Conference (**TAC**)*, 2018.

Automatic Compositor Attribution in the First Folio of Shakespeare
M. Ryskina, H. Alpert-Abrams, D. Garrette, T. Berg-Kirkpatrick
*Annual Meeting of the Association for Computational Linguistics (**ACL**)*, 2017.

Invited Talks

Unsupervised Decipherment of Informal Romanization Jun 2021
NLPhD Speaker Series, Saarland University

Informal Romanization across Languages and Scripts Jun 2021
SIGTYP Lecture Series

Teaching

CMU 11-711: Algorithms for NLP. TA for Taylor Berg-Kirkpatrick Fall 2017
CMU 11-711: Algorithms for NLP. Guest lecturer and TA for Yulia Tsvetkov Fall 2018

Service

Organizing:
- SIGMORPHON 2021 Shared Task 0: Generalization in Morphological Inflection Generation

Reviewing:
- Journals: Cognitive Science (2021), Review of General Psychology (2021)
- Conferences: ACL (2021), EMNLP (2021), CoNLL (2020–2021)
- Workshops: *CL SRW (2020–2021), NeurIPS HAMLETS (2020)
- Secondary reviewing: EACL (2021), EMNLP (2018, 2020)

Volunteering:
- oSTEM/Queer in AI Graduate School Application Review and Fee Aid Programs (co-organizer, 2021)
- CMU LTI Mentoring Program for incoming graduate students (mentor, 2021)
- CMU AI Mentoring Program for undergraduates from underrepresented groups (mentor, 2020)
- CMU SCS Graduate Application Support Program for applicants from underrepresented groups (mentor, 2020)

Selected Coursework

Carnegie Mellon University

Machine Learning (10-701) ◇ Algorithms for Natural Language Processing (11-711) ◇ Advanced Multimodal Machine Learning (11-777) ◇ Probabilistic Graphical Models (10-708) ◇ Grammars and Lexicons (11-721) ◇ Neural Networks for NLP (11-747) ◇ Structured Prediction for Language and other Discrete Data (11-763)

Skolkovo Institute of Science and Technology

Optimization Methods ◇ Representation and Deep Learning ◇ Bayesian Methods ◇ Data Mining

Moscow Institute of Physics and Technology

Mathematical Analysis ◇ Linear Algebra ◇ Discrete Mathematics ◇ Functional Analysis ◇ Differential Equations ◇ Optimization Methods (theory) ◇ Algorithms and Models of Computation ◇ Probability Theory ◇ Mathematical Statistics ◇ Applied Statistics ◇ Machine Learning (theory)

Online

Statistical Learning (Stanford)

Languages and Skills

English (fluent), Russian (native)

Python, Java, C++, MATLAB