

Maksim Tkachenko

CONTACT INFORMATION

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INTEREST AREAS

Text Mining, Natural Language Processing, Computational Linguistics, Machine Learning, Statistics, Probabilistic Graphical Models, Interpretability, Causal Inference

EDUCATION

PhD, Singapore Management University, Singapore
School of Information Systems,
2015 - 2019, Full-Ride Scholarship + Competitive Presidential Doctoral Fellowship
Dissertation: [Comparison Mining from Text](#)
Supervisor: [Hady W. Lauw](#)
Dissertation Committee: [Jiang Jing](#), [Zheng Baihua](#), [Xiaoli Li](#)

Specialist (Master's), St. Petersburg State University, Russia
Faculty of Mathematics and Mechanics,
Software Engineering Department,
2006 - 2011, Competitive Full-Ride Scholarship
Thesis: Named Entity Recognition Technique Based on Wikipedia
Supervisor: [Boris Novikov](#)

SCIENTIFIC PUBLICATIONS (PEER-REVIEWED)

- [1] Ween Jiann Lee, Maksim Tkachenko, and Hady W. Lauw. "Robust BiPoly-Matching for Multi-Granular Entities". In: *Proc. of IEEE International Conference on Data Mining, IEEE ICDM, Short Paper*. 2021.
- [2] Maksim Tkachenko and Hady W Lauw. "CompareLDA: A Topic Model for Document Comparison". In: *Proc. of AAAI Conference on Artificial Intelligence, AAAI, Full Paper*. 2019.
- [3] Maksim Tkachenko, Chong Cher Chia, and Hady W. Lauw. "Searching for the X-Factor: Exploring Corpus Subjectivity for Word Embeddings". In: *Proc. of Annual Meeting of the Association for Computational Linguistics, ACL, Full Paper*. 2018.
- [4] Maksim Tkachenko and Hady W. Lauw. "Comparative Relation Generative Model". In: *IEEE Transactions on Knowledge and Data Engineering, TKDE, Journal Paper*, 29.4 (2017).
- [5] Maksim Tkachenko and Hady W. Lauw. "Plackett-Luce Regression Mixture Model for Heterogeneous Rankings". In: *Proc. of ACM International Conference on Information and Knowledge Management, CIKM, Full Paper*. 2016.
- [6] Maksim Tkachenko and Hady W. Lauw. "A Convolution Kernel Approach to Identifying Comparisons in Text". In: *Proc. of Annual Meeting of the Association for Computational Linguistics and International Joint Conference on Natural Language Processing, ACL-IJCNLP, Full Paper*. 2015.
- [7] Maksim Tkachenko and Hady W. Lauw. "Generative Modeling of Entity Comparisons in Text". In: *Proc. of ACM International Conference on Information and Knowledge Management, CIKM, Full Paper*. 2014.
- [8] Rinat Gareev, Maksim Tkachenko, Valery Solovyev, Andrey Simanovsky, and Vladimir Ivanov. "Introducing Baselines for Russian Named Entity Recognition". In: *Proc. of Computational Linguistics and Intelligent Text Processing, CICLing, Full Paper*. 2013.
- [9] Maksim Tkachenko and Andrey Simanovsky. "Named Entity Recognition: Exploring Features". In: *Proc. of Conference on Natural Language Processing, KONVENS, Full Paper*. 2012.
- [10] Maksim Tkachenko and Andrey Simanovsky. "Selecting Features for Domain-Independent Named Entity Recognition". In: *Proc. of Conference on Natural Language Processing, KONVENS, Short Paper*. 2012.

- [11] Maksim Tkachenko, Alexander Ulanov, and Andrey Simanovsky. "Classifying Wikipedia Entities into Fine-Grained Classes". In: *Proc. of IEEE International Conference on Data Engineering (Workshops), ICDEW, Workshop Paper*. 2011.

Note: Additionally, a conference paper is under review and an extended version of [1] is under journal review.

EMPLOYMENT

[FedEx Express](#), Analytics Center of Excellence, Singapore

Data Science Advisor 06/2021 (Current Position)

I initiate, support, and manage a wide range of data science and advanced analytics initiatives at FedEx Express, Asia-Pacific.

[School of Computing and Information Systems](#), [Singapore Management University](#)

Research Scientist 12/2018 - 05/2021

Research Assistant 11/2013 - 07/2015

I led a team of engineers, research interns, and graduate students in developing a comprehensive e-commerce knowledge base. Our knowledge base contains over 47m products and 100m reviews from various e-commerce platforms. It serves as a backbone for multiple prototypes and research projects (e.g., [SnappyBuyer](#), [ThriftCity](#)).

[St. Petersburg State University](#), Russia

Research Engineer 07/2012 - 11/2013

Junior Researcher 11/2011 - 07/2012

I researched statistical methods for natural language processing, specifically information extraction and knowledge base population. During the appointment, I developed a suite of information extraction tools (e.g., named entity recognition, entity linking) for multiple languages (e.g., English, French).

[Hewlett-Packard Labs](#), St. Petersburg, Russia

Research Engineer 11/2011 - 11/2013

Research Intern 12/2009 - 11/2011

This is a joint appointment with St. Petersburg State University.

I conducted applied and basic research in machine learning and natural language processing. The lab delivered AL/ML expertise to improve the business processes of internal and external customers.

[Lanit-Tercom, Inc.](#), R&D department, St. Petersburg, Russia

Software Engineer 09/2009 - 12/2010

I was responsible for the development and maintenance of the news search engine augmented with sentiment/opinion analysis. As a part of language processing efforts, I worked with a linguist to develop tools for low-level language processing of Russian (e.g., part-of-speech tagger, lemmatizer).

[JetBrains](#), MPS Team, St. Petersburg, Russia

Software Developer 06/2009 - 09/2009

I was developing domain-specific languages in Meta Programming System (MPS).

AWARDS & GRANTS

- 2017-2018 & 2018-2019, Presidential Doctoral Fellow, Singapore Management University (competitive, the recipients of this fellowship are selected from the top 5% of PhD students across SMU).
- Development Technology of Information Extraction Systems for the Russian Language, 2013-2015. (with V. Ivanov, F. Nikolaev, M. Sidikov, A. Simanovsky, R. Gareev, R. Yamilov and V. Solovyev). The project is supported by Russian Foundation for Basic Research.
- SIGIR Student Travel Grants, 2016.

TEACHING AND MENTORSHIP

- Preferred.AI Summer Internship (SMU), Co-Founder and Mentor, 2019-2020.
Interns: [Cao Wanyue](#), [Steffi Tan Xin Rong](#), [Goh Wan Xuan](#)
 - [Neural Network Lab](#), a visual language for designing and evaluating neural network models.
 - [SnappyBuyer](#), a platform that allows you to make better decisions when buying electronics.

- Web Data Extraction and Regression Analysis Instructor (SMU), 2019.
Teaching feedback: 90% of students gave 5 and 4 stars out of 5 to rate the course.
Enrollment: 20.
- Computational Thinking (SMU), Workshop Instructor, 2017.
Teaching feedback: 3.9/5.
Enrollment: 30-35.
- Introduction to Natural Language Processing (SPbSU), Instructor, 2012-2013.
Enrollment: 15-25.

ACADEMIC SERVICE

- PC Member: AAAI 2022, IJCAI-ECAI 2022, IJCAI 2021 (SPC), PAKDD 2021, AAAI 2021, IJCAI 2020, PAKDD 2020, AAAI 2020, SEIM 2020, SEIM 2018, SEIM 2017, SEIM 2016, SYRCoDIS 2014.
- Invited Conference Reviewer: DSAA 2017, PAKDD 2017, DSAA 2016, PAKDD 2015, CIKM 2014, ICDM 2014.
- Invited Journal Reviewer: Transactions of the Association for Computational Linguistics (TACL), Language Resources and Evaluation Journal, Journal of the Association for Information Science and Technology (JASIST).

PUBLIC TALKS

- *Sentiment-Infused Word Embeddings with SentiVec*,
 - VNU Hanoi, University of Engineering and Technology, Vietnam, Dec 2019
 - VNU Ho Chi Minh University of Science, Vietnam, Dec 2019
 - Data Science Meetup by SEEK Asia & Big Data Malaysia, Kuala Lumpur, Malaysia, Mar 2019
- *CompareLDA: A Topic Model for Document Comparison*, Preferred.AI TechFest, Singapore, Aug 2019
- *SentiVec: Sentiment-Infused Word Embeddings*, Singapore Data Science Consortium, Singapore, Jun 2018
- *Learning User Preferences from Multi-Modal Data: Preference Signal from Review Text*,
 - St. Petersburg Academic University, Russia, Mar 2018
 - Computer Science Club of Steklov Institute of Mathematics, St. Petersburg, Mar 2018
 - ITMO University, St. Petersburg, Russia, Mar 2018
 - Avito Data Science Meetup, Moscow, Russia, Feb 2018
 - Sberbank-Technologies, Moscow, Russia, Feb 2018
 - Moscow Institute of Physics and Technology (MIPT), Russia, Feb 2018
- *Language & Artificial Intelligence*, an invited lecture for the Interdisciplinary Electronic Arts Survey (IEAS) course, National University of Singapore (NUS), Sep 2018
- *Comparison Mining*, The Three Minute Thesis (3MT) Competition, Nanyang Technological University, Singapore, Jun 2017

RESEARCH PROTOTYPES

- [CompareLDA](#) (Comparative Latent Dirichlet Allocation) learns predictive topic distributions that comply with pairwise comparison observations.
- [Plackett-Luce Regression Mixture Model](#) finds salient preference groups within a population of rankers.
- [Tree-SVM](#) learns SVM-based classifiers over tree structures (constituency and dependency trees).
- [SentiVec](#) learns word embeddings and enriches them with specified lexical information.
- [Venom](#) is a focused crawler framework.
- [Simple-ML](#) implements online learning algorithms for classification.

LANGUAGES

English (fluent), Russian (native), Chinese (basic)