# Anton M. Alekseev


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**INTERESTS**

natural language processing
deep learning
digital humanities

**EDUCATION**

**St. P. Dept. of Steklov Mathematical Institute RAS**, St. Petersburg, Russia
*PhD Student*, Deep Learning and Natural Language Processing

**Computer Science Center**, St. Petersburg, Russia
*Alumnus, two tracks:* Data Science & Software Engineering
grad. 2014

**St. Petersburg University**, St. Petersburg, Russia
*Specialist*, the Faculty of Mathematics &Mechanics,
Applied Informatics in the field of International Relations,
grad. July 2014 *cum laude*, score 5.0/5.0

**MOOCs**
Social Network Analysis, UMich@Coursera, 2013
Functional Programming Principles in Scala, EPFL@Coursera, 2013

**TEACHING**

**Lecturer** — **Computer Science Center**
Sep 2017 – Dec 2019 — St. Petersburg, Russia
Lectures on Natural Language Processing in Russian.

- Topics: from string processing algorithms to *Transformer*-based models, two lectures a week.
- The design of tests and homeworks (with D. Bobrovnikov and G. Rozhkov).
- The course's syllabus, slides and videorecords are available online
  Also: YouTube playlist, 22 videos

**Visiting Lecturer** — **ITMO University**
Feb 2018 – May 2019 — St. Petersburg, Russia
Lectures on Natural Language Processing in English.

- Topics: necessary mathematical and algorithmic toolkits, string processing, **machine learning in NLProc**: language modeling, text classification, duplicate detection, text clustering and topic modeling, modern distributional semantics, POS-tagging, named entities recognition, syntax parsing and statistical machine translation elements.
- The design of tests, homeworks (with K. Buraya) and written examination.

**Visiting Teacher** — **Higher School of Economics**
Sep 2016 – Dec 2016 — St. Petersburg, Russia
A short-term contract for teaching a programming workshop in Russian. Introduction into **Programming and Data Analysis** in Specialized Environments.

- Topics: introduction into Python [main part of the course], **NumPy, scipy.sparse matrices, basic Pandas**, regular expressions, parsing XML, CSV, JSON, introduction into **machine learning with scikit-learn**, GNU coreutils, a peek at .git/.hg
- Developed a new and an up-to-date introductory programming course programme: course site @ HSE.ru, course materials.

## OTHER EXPERIENCE

**Acting Junior Researcher** — **St. Petersburg Department of Steklov Mathematical Institute RAS**
Mar 2018 – up to now — St. Petersburg, Russia
AI Laboratory, led by Sergey Nikolenko, PhD.
Research projects in deep learning @ Samsung-PDMI Joint AI Center: text-based recommender systems, unsupervised aspect extraction, representation learning, user profiling.

**Machine Learning Specialist** — **Native Media LLC**
Oct 2016 – Feb 2018 — St. Petersburg, Russia
Predictive services for native video advertising **nativeroll.tv**, from scratch.

**Intelligent Systems Engineer** — **SofIT Labs LLC**
Aug 2015 – Sep 2016 — St. Petersburg, Russia
Natural language processing and information retrieval for customer-assisting services.

**Intern → Software Engineer** — **Yandex**
Feb 2013 –Aug 2015 — St. Petersburg, Russia
Online reviews processing backend, then Yandex.Rabota.

## SKILLS

**Languages**: Russian (Native), English (Advanced)
**Programming Languages**: Scala, Python, Java, bash, R (basic)
**Tools**: scikit-learn, keras, PyTorch, scipy, numpy, pandas, gensim
**Online Classroom Platforms**:
Stepik (online tests), repl.it (workshops, exam tests), Kaggle/Kaggle inClass
**Other**: Microsoft Office (World, Excel, PowerPoint), LaTeX, HTML, CSS

## SCHOOLS

Bayesian Methods in Deep Learning Summer School
*Aug 26-30, 2017, Moscow, Russia.*

The 11th Russian Summer School in Information Retrieval
*Aug 21-25, 2017, Yekaterinburg, Russia.*

DeepHack.Turing Summer school-hackathon (**Kaggle**-based participants selection)
*Jul 24-30, 2017, Dolgoprudnyy, Russia.*

5th Lisbon Machine Learning School.
*Jul 16-23, 2015, Lisbon. Portugal.*

International Social Network Analysis Summer School (HSE)
*Aug 8–13, 2014, St. Petersburg, Russia.*

The 44-th International Youth School-Conference "Current problems in mathematics"
*Jan 27 - Feb 2, 2013, Yekaterinburg*

The 6th Russian Summer School in Information Retrieval.
*Aug 6-10, 2012, Yaroslavl, Russia.*

## TALKS

*(published conference papers presentations are not included)*

Same Words, Different Tone:
Genre-Specific Sentiment Lexicons for Digital Music Reviews [English]
(winter 2019, LMAC-III, 17 Dec. 2019)

Unlemmatization: Recovering Word Forms in Morph. Rich Languages [English]
(autumn 2017, AINL: St. Petersburg, Russia, 20-23 Sept. 2017)

Natural Language Processing: Introduction [Russian]
(spring 2017, Kaggle Club)

How to build Yandex/Google from scratch? [Russian]
(summer 2016, Futurum STREAM Camp)

## RESEARCH PAPERS


[1] A. Alekseev and S. Nikolenko. User profiling in text-based recommender systems based on distributed word representations. *Communications in Computer and Information Science*, 661:196–207, 2017.

[2] A. Alekseev and S. Nikolenko. Word embeddings for user profiling in online social networks. *Computacion y Sistemas*, 21(2):203–226, 2017.

[3] A. Alekseev and S.I. Nikolenko. Predicting the age of social network users from user-generated texts with word embeddings. *Proceedings of the AINL FRUCT 2016 Conference*, 2017.

[4] A. Alekseev, E. Tutubalina, V. Malykh, and S.I. Nikolenko. Improving unsupervised neural aspect extraction for online discussions using out-of-domain classification. ***To appear*** *in the Journal of Intelligent and Fuzzy Systems*, 2020.

[5] R. Galinsky, A. Alekseev, and S.I. Nikolenko. Improving neural network models for natural language processing in russian with synonyms. *Proceedings of the AINL FRUCT 2016 Conference*, 2017.

[6] V. Malykh, A. Alekseev, E. Tutubalina, I. Shenbin, and S. Nikolenko. Wear the right head: Comparing strategies for encoding sentences for aspect extraction. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 11832 LNCS:166–178, 2019.

[7] A. Menshikova, D. Maglevanaya, M. Kuleva, S. Bogdanova, and A. Alekseev. Art critics and art producers: Interaction through the text. *Communications in Computer and Information Science*, 859:113–124, 2018.

[8] S.I. Nikolenko, E. Tutubalina, V. Malykh, I. Shenbin, and A. Alekseev. Aspera: aspect-based rating prediction model. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 11438 LNCS:163–171, 2019.

[9] I. Shenbin, A. Alekseev, E. Tutubalina, V. Malykh, and S. I. Nikolenko. Recvae: a new variational autoencoder for top-n recommendations with implicit feedback. In *Proceedings of the 13th International Conference on Web Search and Data Mining*, WSDM '20, page 528–536, New York, NY, USA, 2020. Association for Computing Machinery.

[10] А. Алексеев, А. Фильченков, and А. Тулупьев. Декодирование последовательности состояний бинарной скрытой марковской модели, представленной в виде алгебраической байесовской сети, по последовательности наблюдений. *Труды СПИИРАН*, 24(0):165–177, 2013.