Sergey Lisitsyn

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Career

2021 − … **Director of Product and Engineering**, *Yandex*
- *Yandex Metrica*, the 4th most popular traffic analysis tool used by more than 5% sites worldwide[2]
- *AppMetrica*, the 9th most popular mobile analytics SDK worldwide[3]

Responsible to oversee and align multiple teams including engineering, product management, and marketing. I've **defined and executed strategy** with multiple programs and projects. Overall, I've been leading more than 80 people. Highlights:
- *Freemium Analytics*: due to market changes I've streamlined the transition of free-to-use products to **a freemium model**.
- *1st Party Data Activation*: we've launched APIs and other features allowing thousands of advertisers and publishers to **leverage available 1st party data** for better targeting and attribution in cookieless world.
- *Insight Analytics*: I've executed the transition to a smarter way of analytics including ML-based **forecasting and benchmarking** to increase client engagement.
- *Security and Transparency*: we've **open sourced**[4] our client-side code, resolved issues with **GDPR and CCPA compliance**, and our services became certified to **ISO/IEC 27001**.

2019 − 2021 **Software Engineering Manager / Program Manager**, *Yandex*

Designed and executed engineering programs to improve cross-device and audience targeting technlogies of Yandex Ads. I've managed multiple teams of overall twenty data and ML engineers. Highlights:
- *Cross-device Matching Platform*: designed the component-level structure and executed the implementation allowing Yandex Ads to effectively **target and attribute ads across all devices and browsers** with *significant* impact.
- *Tracking Protection*: continuously defined the changes to make Yandex **ready for the cookieless world**. I've introduced and led the implementation of the YTP[6] (Your Tracking Protection) technology and became Yandex's representative in W3C Privacy Community Group[5].
- *Look-alike Audience Engine*: supervised the implementation of a new **look-alike targeting technology based on deep learning**. The technology became a *significant* precision improvement for billions of ad impressions monthly.

2016 − 2019 **Senior Software Engineer / Team Leader**, *Yandex*

Implemented new components of a user understanding platform (Yandex.Crypta). Managed a team of 8 software engineers. Highlights:
- *Yandex Audience*: I've designed the data processing component and implemented its critical components in C++ and Python. The platform manages **more than 5 million segments** of Yandex's partners and clients.
- *User Segmentation Platform*: I've led the implementation of a platform managing hundreds of targeting segments. The platform is used by **more than 200 of customer managers monthly**.
- *Enterprise Search*: I've implemented an internal enterprise search used for troubleshooting and discovery by **a hundred of software engineers weekly**.

2014 − 2016 **Senior Software Engineer**, *Yandex*

Designed and implemented components of a terascale machine learning infrastructure to process user behaviour data with implementations in C++ and Python. Once deployed, the component I developed **increased the relevance for billions of ad impressions daily**. The approach based on **siamese deep neural networks** is patented in the US [KKS⁺21] by our team.

2012 − 2014 **Software Engineer**, *SmartSolutions (Russian Railroads partner)*

Designed and implemented one of a kind **multi-agent constrained schedule optimization system**. I've designed a solution architecture and implement the core optimization components in Java (Akka). The system is based on a multi-agent version of Monte-Carlo Tree Search (MCTS) algorithm. The deployed system **had contributed to the +5% increase of average train speed** over the Trans-Siberian railroad in the following years.

2011 − 2012 **Software Engineer**, *NetCracker (An NEC company)*

Developing the *Service Processing Framework* of NetCracker. The component is essential for **dozens of network operators worldwide**. I'd been designing and implementing Change Requests and worked with the tech stack of Oracle SQL and Java EE.

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[*] Due to some ambiguities in the transliteration rules the spelling of my name varies: Sergei Lisitcyn (legal name). I prefer the spelling *Sergey Lisitsyn*.

[1] Yandex is an international technology company that builds products and services powered by AI: `https://yandex.com/company`.

[2] W3Tech on Yandex Metrica: `https://w3techs.com/technologies/details/ta-yandexmetrika`.

[3] *data.ai* (AppAnnie) report on mobile SDKs including Appmetrica: `https://www.data.ai/en/apps/top/top-sdks/app-analytics/worldwide/overall/all`.

[4] Yandex Metrica tag (`https://github.com/yandex/metrica-tag`) and AppMetrica SDK (`https://github.com/appmetrica`).

Innovation

2022 *A method for tracking protection.* We've designed a method to provide **intelligent settings for tracking protection** for browsers. The method is based on a machine learning system trained on user-generated data. Patent pending: 'Method and a system for controlling display of a web page field'.

2021 *YTP (Your Tracking Protection).* I've designed and executed the implementation of **a novel tracking protection technology** for *Yandex Browser*. The *YTP technology*[6] released in 2021 is an alternative to a few counterparts such as Safari's ITP and Firefox's TCP.

2015 *A method of processing user data.* Our team at Yandex has designed a deep learning **architecture to process multimodal user data** received by multiple services. My main contribution to the technology is in the training procedure of the model. The original approach is described in a *US Patent 11,157,522* [KKS+21] published in 2021.

Education

2012 – 2014 **MSc**, *Samara State Aerospace University*, High Performance Computing (HPC) programme
Thesis *'Transfer Learning algorithms for classification problems'*
In my thesis I've researched and implemented a transfer learning approach that is based on nonlinear dimensionality reduction. The **fastest at the time implementations** of researched methods were published as an open-source C++ library Tapkee [LWG13] (featured in [Jan21], more than 200 GitHub stars and at least 15 citations).

2008 – 2012 **BSc**, *Samara State Aerospace University*, Major in Applied Mathematics
Thesis *'Road Sign Recognition using Support Vector Machines'*
Designed and implemented fast and accurate traffic signs recognition model (with accuracy of 97.47% compared to 98.84% of human performance). The approach's became influential as **a published paper [LB12] with 10 citations**.

Teaching

2016 – 2022 **Senior Lecturer**, *Higher School of Economics (HSE), Graduate School of Business*
For a number of years, I taught the *Applied Machine Learning*[7] and *Neural Networks and Deep Learning* courses for graduate students. I've also served as a supervisor for *27 MSc theses and 29 term papers*. Most of my students have done research in business applications of machine learning. As per students vote I was named one of the *Best Teachers of HSE in 2021 and 2022*[9]. The courses are also voted *'Best Course for Career Development'*.

2016 – 2019 **Trainer**, *Digital Technologies School*
I've created and taught a course on *Python, Data Science, and Machine Learning*[8]. The paid course had 10 four-week sessions with **254 students from different companies**, mostly banks. The students have ranked the course 9/10 in post-graduation polls.

Communities

since 2018 **Reviewer**, *Journal of Machine Learning Research*, MLOSS track
I've served as a reviewer of **four journal papers**. The reviewer's role is to evaluate the novelty of software, the quality of its code and documentation, and its impact.

2018 **Organizer**, *Machine Learning Open Source Software (MLOSS) workshop*, Neural Information Processing Systems (NeurIPS'18) conference, Montréal, Canada
I've co-organized the MLOSS'18 workshop (`https://2018.mloss.org`). The workshop had **hundreds of visitors**, three invited talks, four demos, five spotlights, and 15 posters.

2013 – 2019 **Mentor and Organization Administrator**, *Google Summer of Code (GSoC) program*, shogun.ml
I've mentored multiple projects of **GSoC students** (some of them are: 'Implement algorithms for BSS and ICA based on AJD of matrices', 'Essential Deep Learning Modules', 'New Parameter Framework and Plugin Based Architecture for Shogun'). Such mentoring includes reviewing code, clarifying project scope, and scheduling a project.

2011, 2012 **Student**, *Google Summer of Code (GSoC) program*, Shogun Machine Learning Toolbox
I've completed two summer projects 'Implement multitask and domain adaptation algorithms' and 'Implement missing dimensionality reduction algorithms'. After the project I've became the **core of developer of Shogun** [SRH+10] and its 2nd most active contributor.

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5 W3C Privacy Community Group: `https://www.w3.org/groups/cg/privacycg/participants`.
6 The YTP technlogy explained: `https://browser.yandex.com/help/personal-data-protection/ytp.html`.
7 The *Applied Machine Learning* course on GitHub: `https://github.com/lisitsyn/courses/tree/master/hse-aml`.
8 The *Python, Data Science, and Machine Learning* course on GitHub: `https://github.com/lisitsyn/courses/tree/master/dts`.
9 Students' Choice — Graduate School of Business: `https://www.hse.ru/en/best/2021_bm`, `https://www.hse.ru/en/best/2022_bm`.

References

[Jan21]   Jeroen Janssens. *Data Science at the Command Line: Facing the Future with Time-Tested Tools*. O'Reilly Media, Inc., 2021.

[KKS⁺21]   Andrey Borisovich Krasnikov, Gennady Gennadievich Kuzmin, Sergey Aleksandrovich Shiryaev, Dmitrii Petrovich Sopin, Sergei Olegovich Lisitcyn, Dmitrii Aleksandrovich Levanov, Dmitrii Andreyevich Kuksa, and Sergey Victorovich Kotsur. Method of and system for processing activity indications associated with a user, October 26 2021. US Patent 11,157,522 `https://patents.google.com/patent/US11157522B2`.

[LB12]   Sergey Lisitsyn and Oksana Bayda. Road sign recognition using support vector machines and histogram of oriented gradients. *Computer optics*, 36(2):289–295, 2012.

[LWG13]   Sergey Lisitsyn, Christian Widmer, and Fernando J. Iglesias Garcia. Tapkee: An efficient dimension reduction library. *Journal of Machine Learning Research*, 14(36):2355–2359, 2013. `http://jmlr.org/papers/v14/lisitsyn13a.html`.

[SRH⁺10]   Sören Sonnenburg, Gunnar Rätsch, Sebastian Henschel, Christian Widmer, Jonas Behr, Alexander Zien, Fabio de Bona, Alexander Binder, Christian Gehl, and Vojtch Franc. The shogun machine learning toolbox. *The Journal of Machine Learning Research*, 11:1799–1802, 2010.