

# Oleg Shpynov

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## Summary

Seasoned research and development engineering leader with strong math background, good communication and teamwork skills. I am leading a group that develops machine learning algorithms, bioinformatics software and scalable computational pipelines for data analysis. Took part in the development of major JetBrains products with focus on the code analysis from lexical analysis to advanced type system development and semantic verifications.

## Experience

2013 - today

### **Research and Development Team Lead**

*JetBrains Research, Saint-Petersburg, Russia*

Head of research and development group. Group is developing novel algorithms and methods for experimental data analysis, building scalable computational pipelines and tools, and working in collaboration with researchers on various bioinformatics studies.

- Built a team of software developers with expertise in software development, machine learning, data analysis and bioinformatics
- Lead development of two products: JBR Genome Browser and SPAN Semi-supervised Peak Analyzer
- Developed various open source libraries including Viktor (fast f64 computations for Kotlin), Bioinf-commons (Bioinformatics library in Kotlin), big (BigBed/Wig files format support for JVM), npy (Numpy arrays support for JVM)
- Developed web application for scientific papers analysis PubTrends
- Authored scientific papers
- Onboarding and mentoring software developers of all levels
- Coordinated research and development activities

Applied technologies: Unix, Java, Kotlin, Swing, Python, Jupyter, Pandas, Matplotlib, Docker, Docker Compose, PostgreSQL, Neo4j, Flask, Celery, Nltk, Pytorch, HTML, CSS, Javascript, React, Bootstrap, Git, GitHub, AWS, Continuous Integration TeamCity

Group website: <https://research.jetbrains.org/groups/biolabs>

Personal GitHub account: <https://github.com/olegs>

2014 – today	<b>Students mentor</b> <i>Computer Science Center, Saint-Petersburg, Russia</i> <i>Higher School of Economics, Saint-Petersburg, Russia</i> <i>Bioinformatics Institute, Saint-Petersburg, Russia</i> Mentored various student project in software development and machine learning including two successful Masters dissertations
2006 – 2013	<b>Senior software developer</b> <i>JetBrains, Saint-Petersburg, Russia</i> Main focus was on the analysis of source code in programming languages, starting from lexical analysis to advanced type system development and source code semantic verifications. Developed from scratch the most intelligent IDE for Ruby and Rails - RubyMine IDE, language and frameworks support. <ul style="list-style-type: none"> <li>• Developed JetBrains products: flagship tool IntelliJ IDEA, PyCharm</li> <li>• Created RubyMine IDE for Ruby programming language</li> <li>• Maintained and developed IdeaVIM plugin (vim emulation plugin, 7+mln downloads)</li> <li>• Various plugins development including GitHub integration support, web-markup languages editing capabilities like YAML, SCSS, LESS, etc.</li> <li>• Participated in conferences on Ruby on Rails as a speaker</li> <li>• Authored blog blogposts on Rubymine, IntelliJ IDEA, etc.</li> </ul> Applied technologies: Ruby, Rails, Unix, Java, Concurrency, IDE, Swing, Git, GitHub, Continuous Integration TeamCity  Website: <a href="https://www.jetbrains.com/">https://www.jetbrains.com/</a>

## Education

2020	Product management course by Computer Science Center, Saint-Petersburg Product management, startup entrepreneurship
2019	Deep learning nanodegree at Udacity, certificate number: 9GSNRHUA Machine learning, deep learning, models deployment
2015	Microsoft Machine Learning and Intelligence School, Microsoft, Russia Machine learning, artificial intelligence, statistics.
2011 – 2012	Saint-Petersburg Academic University — Nanotechnology Research and Education Centre of the Russian Academy of Sciences, Russia Bioinformatics, molecular biology, statistics.
2008 – 2010	Post graduate student (PhD) in Computer Science, Faculty of Mathematics and Mechanics, Saint-Petersburg State University, Russia
2003 – 2008	Masters in Computer Science, score 4.8 of 5. Saint-Petersburg State University, Russia Faculty of Mathematics and Mechanics, Department of System Programming

## Selected publications

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| 2021 | Oleg Shpynov, Kapralov Nikolai. "PubTrends: a scientific literature explorer", BCB '21: Proceedings of the 12th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics, Article No.: 72, Pages 1<br>DOI 10.1145/3459930.3469501              |
| 2021 | Oleg Shpynov, Aleksei Dievskii, Roman Chernyatchik, Petr Tsurinov, Maxim N Artyomov. "Semi-supervised peak calling with SPAN and JBR Genome Browser", Bioinformatics, Volume 37, Issue 22, 15 November 2021, Pages 4235–4237<br>DOI 10.1093/bioinformatics/btab376    |
| 2020 | Anna Nikiforovskaya, Nikolai Kapralov, Anna Vlasova, Oleg Shpynov, Aleksei Shpilman. "Automatic generation of reviews of scientific papers, 2020 19th IEEE International Conference on Machine Learning and Applications (ICMLA)<br>DOI 10.1109/ICMLA51294.2020.00058 |

## Languages

Russian	Native
English	Fluent
Deutsch	Elementary

## Honors and Awards

Graduated Saint-Petersburg State University cum laude  
Winner of Saint-Petersburg state school contests on math, physics, programming

## Interests

Machine learning, data analysis, and bioinformatics.  
Traveling, hiking, snowboarding, diving, cycling, photography.