

# Nick Mazurkin — Software Engineer, Team Lead, Staff Engineer

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Java, Python, Web, DB, No-SQL, Linux, ML, AI, Cloud, K8S

Software development professional with years of experience crafting web applications and backend services using Java and Python. I am skilled in search and machine learning technologies, web technologies, application architecture, database design, and Linux system administration.

## Experience

PulsePoint, New York, USA

[PulsePoint.com](#), AdTech, OpenRTB Exchange, DSP, DMP

Java · Spring Framework · Project Reactor · Lucene · JUnit · Jetty · Netty · Disruptor · Ant · Maven · Linux · Kubernetes · Docker · Graphite · Graphana · Kibana · Prometheus · Git · Python · Jupyter · NumPy · Scikit-Learn · Luigi · ETL Redis · Cassandra · Hive · No-SQL · Presto · Vertica · AWS S3 · AWS EC · AWS SageMaker · Google Cloud BigQuery · Google Cloud Storage · Algorithms · Algorithm Design · Data Structures · Machine Learning Algorithms · Real-Time Bidding (RTB) · Multi-Threading · Concurrency

### Software Engineer with Expertise in Java, Python, and ML (Feb 2017 — present)

Experienced software engineer with a proven track record of developing and deploying high-performance applications using Java, Python, ML, Linux, and web technologies. Expertise in building and scaling distributed systems, implementing machine learning models, and optimizing performance for large-scale data processing.

- Developed an asynchronous web crawler/fetcher for /ads.txt and /app-ads.txt web resources, providing and enhancing transparency and trust for the SSP and DSP partners of our Exchange platform (processing ~500K domains daily, Java, Spring, Netty).
- Developed a supply prediction system for RTB traffic, enabling clients to switch to a cheaper self-serving platform (processing 24M documents daily using Lucene, Spring Framework and ML/CatBoost).
- Implemented a scoring model to effectively throttle proxy processing of incoming supply, selecting only 20% of the most profitable RTB requests and blocking 80% of the least profitable supply. This resulted in a 50% reduction in the number of required servers.
- Designed and implemented a DMP platform using asynchronous Java, gRPC, Cassandra, and Redis. This platform provides the effective solutions for targeting and optimization algorithms, accessing 30 billion entities with a p99 latency of 5ms and a p50 latency of 1ms.
- Developed a standalone service for domain attribution, enabling efficient domain and application bundle targeting (achieving 100k/sec QPS using gRPC and REST).
- Developed a client-side balancing library using the JSQ algorithm and circuit-breakers, significantly reducing client-server communication latency from p95=6ms to p95=1ms.
- Containerized and deployed a cluster of DoubleVerify service instances, achieving 300k/sec QPS in peak. Implemented custom client-side balancing and a low-latency custom client-to-cluster connection HTTP/REST library, enabling faster and easier deployments with efficient access.
- Developed a dockerized test infrastructure for custom configuration of Redis and Cassandra, similar to TestContainers, which facilitated the execution of integration tests.
- Developed a hierarchy of docker images for ~20 projects written in Python, Java, and Jupyter, significantly reducing the time required to create new projects.
- Developed an audience builder for 15 audiences, enabling our client to target very specific audiences with focus either on volume or accuracy (using Luigi, Hive, and ETL).
- Successfully resolved 2-3 support issues daily as part of a periodical 3rd-line technical on-call support rotation.
- Implemented several dozen RTB changes in the application stack, including improvements, new features, deployments, fixes, and monitoring (using Java, Netty, and Linux).
- Developed an engine for internal reports with embedded alerting, enabling transparent and quick monitoring of important pipelines and services (using Python, Hive, Impala, and Jupyter). Created 6 internal engineering reports.
- Implemented 7 ETL pipelines in Python using Luigi, Docker, Hive, and Presto.
- Improved video-completion rate model by making it more accurate and stable (Python, Scikit-learn)
- Implemented and delivered to production the look-alike audience model (Python, Catboost, Luigi, K8S)
- Developed a model to predict the quality of NPI attribution, enabling clients to select the confidence level for HCP targeting.
- Developed a model to predict the quality of ICD10 attribution based on obfuscated and aggregated clean-room prescription data, enabling clients to select DTC audiences based on condition probability.
- Developed a secure facade to access and process obfuscated clean-room data, providing a secure and efficient interface to private data (Python, Flask, Gunicorn, Google Cloud API).
- Implemented and delivered the gender prediction model (Python, Sklearn)

### Team Lead, Data Science and Engineering team (Apr 2020 — present)

Led a team of 6 data scientists and 3 Java/Python engineers (DSE) working across 5 time zones, responsible for planning, performance tracking, coordination, and agile management. Proven ability to lead and mentor teams, manage projects, and deliver results on time and within budget.

- Successfully delivered 3 new internal services and 5 new ML models as a team leader.
- Successfully completed 20 quarterly plans with the team in research, development, and deployment.
- Successfully migrated DSE projects to the new data center.
- Provided interviewing, on-boarding, and mentoring for new team members.
- Successfully coordinated and communicated with other teams and team leaders on numerous projects.

- Successfully maintained an iterative Agile framework, including scrum, retrospectives, and prioritization of tasks.

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## Deutsche Bank

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Deutsche Bank Technology Center, Moscow, RU

### Senior Software Java Engineer, AVP (Jun 2016 — Feb 2017)

Java · Linux · Spring Framework · Angular · Solace · KDB

- Implemented several new algorithms, code and concurrency improvements to the dbCAP project achieving the required performance of the solution (exchange events messaging on Solace System message broker, KDB+, java).
- Successfully implemented the test suite for the legacy projects allowing to extend the life-time and reliability of the legacy projects (process control, runtime log analyzers, TeamCity, environment settings).
- Improved the internal messaging framework based on Solace Systems message broker (achieved up to 160000 messages/sec stored reliably to the disk), introduced solutions for the performance metering.
- Designed and implemented the multithreaded and garbage-less algorithms and structures (Java) for message acknowledgement in complex environments to provide effective processing without long GC pauses.
- Implemented a modern front-end build toolchain for the legacy project, added the required UI features for the project (Angular 2, NPM, RxJs, TypeScript, TSLint, System.js, Rollup, jQuery, Bootstrap).

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## OK.ru

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OK.ru, Moscow, RU, the one of the largest social networks (54 MAU)

### Senior Software Java Developer (Oct 2012 — May 2016)

Java · Linux · Lucene · Cassandra · Kafka · Spring Framework · jQuery · ML · LVS

- Implemented a multiple features in the searching infrastructure of the OK.ru service: backend services, data storages, relevancy customization, indexation, replication (Apache Lucene, Spring Framework, Web Services, SQL/noSQL, Linux)
- Fixed multiple legacy issues in L12N infrastructure for the OK.ru service including the resources editor, Java frameworks and workflow process, achieved resource propagation to ~2000 servers.
- Make significant contribution to the moderation and antispam services, architecture and implementation, implemented NSFW detector, spam detector (based on naive bayes detector), UGC filter cluster (near real-time voting-quorum service).
- Successfully designed, implemented and run the MVP for the startup project (Tinder-alike) in very short time (3 months), created the architecture of the service including SOA, custom search service, asynchronous binary client protocol, push service (GCM), photo uploading/processing/distribution service, statistics and analytics (apache netty, apache cassandra, kafka, queues, messaging, mobile apps, python, machine learning).

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## Internet Lotto Ltd

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The social network, Yoshkar-Ola, RU

### Team lead, Software developer (Sep 2008 — Jun 2010)

Java · J2EE · Linux · Nginx · Apache HTTPd · Apache Tomcat · Apache ActiveMQ · Terracotta · MySQL · Spring Core · Spring WS · Spring WebFlow · Spring Modules · Spring AOP · Sphinx · EhCache · Quartz · iBatis · Velocity · JSP&JSTL · JMX · DWR · JUnit · EasyMock · Apache Lucene/Solr · Apache Ant · JScript · jQuery · jQuery UI · Amazon S3 · Jetty · ImageMagick · MEncoder

- Architecture and implementation of social network for poker players
- Coding
- Database design and administration (MySQL)
- Transparent integration with payment system moneta.ru
- Integration with poker rooms (statistics, promo links)
- Team management (2 members)

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## Moneta.ru

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Moneta.ru, Yoshkar-Ola, RU, the online financial service

### Software developer (Mar 2007 — Sep 2008)

Payment/billing system «moneta.ru»

Java · J2EE · ORACLE & PL/SQL · Spring Core · Spring WebFlow · XSLT

- Database schema design and implementation
- Stored procedures implementation and meta-data management
- DAO layer implementation
- Unit and integration test suites

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## Chromatec SCB LLC

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Chromatec.ru, Yoshkar-Ola, RU, the gas chromatography equipment and software manufacturer

### Team lead, Software Developer, Electronics Engineer (1996 — 2007)

Delphi · Borland C/C++ · MS C/C++ · XML/XSLT · Firebird SQL Server · MS Access · MS Visual Basic · Win32 API · CVS · ASM · i8051

- Desktop software for chemical industry working with hardware devices
- Digital electronic systems on i8051 architecture (schemes, printboards, software)
- Real-time embedded i8051-software with C and Assembler.

## Open Source projects

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**net-crusher (2016)**

TCP/UDP proxy library for automated and manual connectivity testing (used by RabbitMQ, Aerospike, Terracotta), more: [project](#), [sources](#), [usages](#)

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**protobuf (2016)**

Performance fix for the protobuf java compiler: [pull request](#)

## Education

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**Mari State Technical University (1994 — 1999)**

Yoshkar-Ola, Russia, “Computing machines, complexes, systems, and networks”, Engineer (with honors, equivalent to a master’s degree)

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**Mari State University (2002 — 2003)**

Yoshkar-Ola, Russia, «Anti-Crisis Management», Anti-Crisis Manager

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**Additional**

- 2024, Generative AI for Everyone, [Coursera](#)
- 2024, Generative AI with Large Language Models, [Coursera](#)
- 2020, Become a Manager, [LinkedIn](#)
- 2016, Codility Golden Award (Vanadium 2016), [Codility](#)
- 2016, Algorithms: Design and Analysis, Part 2, [Coursera](#)
- 2016, Algorithms: Design and Analysis, Part 1, [Coursera](#)
- 2016, Economics for non-economists, [Coursera](#)
- 2016, Game Theory, [Coursera](#)
- 2016, Machine Learning, [Coursera](#)
- 2016, An introduction to machine learning, [Coursera](#)

## Resume

The latest and the most detailed resume can be downloaded in different document formats at <https://mazurk.in>