

# Ivan Reshetnikov

Senior ML / AI Engineer

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## Professional Summary

Senior ML / AI Engineer with 10+ years in software engineering and 5+ years in applied Data Science.

I build production ML systems for real business problems: matching, ranking, duplicate detection, pricing, anomaly detection, forecasting, and LLM/RAG-assisted data workflows. I usually work end-to-end, from understanding the problem and defining metrics to building, deploying, and improving the system after release.

## Work Experience

### Senior ML Engineer

Maksmart

Aug 2024 - Present

Building production ML systems for a B2B marketplace: product matching, duplicate detection, pricing, anomaly detection, catalog quality, delivery forecasting, and LLM/RAG-assisted data workflows.

- Shipped 8 ML models to production across matching, pricing, catalog quality, and forecasting.
- Built a product matching system that reduced unmatched supplier offers by 2x.
- Developed duplicate scoring for implicit product duplicates, reducing duplicates by 60% at 95% precision.
- Built price regression with confidence estimates to support supplier offer moderation.
- Implemented price anomaly detection to identify unit-of-measure issues, data-entry errors, and suspicious supplier prices.
- Implemented last-mile delivery time forecasting with under 15% error.
- Designed LLM/RAG-assisted workflows for product type discovery, catalog maintenance, and data labeling.
- Built data processing and data quality pipelines, reducing memory consumption by 5x.

### Data Scientist

Architech NYC

Apr 2022 - Jul 2024

Built production ML, analytics, and automation tools for transportation and business operations: rate calculation, document validation, BI reporting, and email workflow automation.

- Built a container transportation Rate Calculator with 11% RMSPE, monitoring, and regular retraining.
- Developed an OCR-based document validation service with 95% precision, reducing dispatcher workload.
- Built BI dashboards for transportation operations, improving visibility and reducing manual reporting.
- Implemented an AI-assisted email handling system using ChatGPT API and business data integrations to reduce response times.
- Investigated data consistency issues and prepared ad-hoc analyses for current business needs.

## Machine Learning Engineer

Sape

Dec 2020 - Mar 2022

Applied ML to SEO and search products operating on millions of documents: semantic search, topic classification, text similarity, and price recommendation.

- Built a semantic backlink search system across millions of documents, reducing search latency from about 12 seconds to 3 seconds.
- Replaced mostly tag-based or random backlink discovery with similarity-based recommendations.
- Improved backlink suggestion relevance, contributing to positive user feedback and continued investment in the feature.
- Developed topic classification, text similarity, and price recommendation models for SEO workflows.
- Analyzed product usage and dissatisfaction signals to support SEO specialists and product decisions.

## Lead Ruby on Rails developer

Sape

Dec 2016 - Nov 2020

Led backend and full-stack development for an ad-tech product integrating multiple advertising platforms. Worked on technical decisions, API design, code review, testing, deployment, monitoring, and frontend modernization.

- Adapted the API for both external users and frontend use, reducing duplicated integration logic.
- Built tools for advertising analytics, moderation-state synchronization, and campaign management.
- Added system problem-detection tooling to make operational issues easier to find and investigate.
- Implemented interactive UI features such as weekly schedules, bulk copying, and ad previews.
- Supported frontend migration from CoffeeScript/jQuery to ES6 and React.
- Helped unify account-wide UI layout and styling.

## Ruby on Rails developer

Lakehouse

Apr 2016 - Nov 2016

Supported and developed Ruby on Rails applications for real estate process management and professional qualification workflows.

- Supported and developed a real estate process-management project.
- Supported and developed a qualification/training project for beauty specialists.
- Worked on backend features, tests, deployment, and legacy frontend maintenance.

## Software developer

Nasca Ltd.

Apr 2015 - Jan 2016

Worked on web development and trading-related software in a Scrum team. Built backend features, contributed to C++ networking components, wrote unit tests, and participated in code review.

- Developed a public website from scratch.
- Built parts of a multi-component network application for exchange-related workflows.
- Implemented a component responsible for interaction with the exchange.
- Contributed to Qt client design and implementation.
- Added unit tests using the Catch framework.
- Used design patterns and participated in code review.

## C++/Qt developer

Nasca Ltd.

Dec 2012 - Sep 2013

Worked on trading-related desktop and backend tools, including trading engine improvements, log processing, exchange emulation, and automation utilities.

- Improved components of the trading engine.
- Built tools for exchange log parsing and analysis.
- Implemented features for transaction logging software.
- Developed an exchange emulator for testing and development.
- Added automated exchange log downloading and user email notifications.
- Used version control in a small engineering team.

## Core Skills

**Machine Learning & Modeling:** Python, machine learning algorithms, PyTorch, scikit-learn, LightGBM, feature engineering, gradient boosting, regression, classification, clustering, neural networks, Natural Language Processing (NLP), embeddings, fastText, sentence-transformers, metric learning, active learning, AutoML, Optuna, calibration, model evaluation

**Production ML & MLOps:** MLOps, model deployment, model monitoring, scheduled retraining, validation gates, fallback strategy, model versioning, data quality control, CI/CD, GitLab CI, automated testing, pytest, Docker, FastAPI, Google Cloud Platform (GCP), PostgreSQL, ClickHouse, SQL

**Search, Matching & Ranking:** product matching, duplicate detection, e-commerce search/catalog, information retrieval, semantic search, similarity search, vector search, candidate generation, approximate nearest neighbor search, reranking, pairwise features, fuzzy matching, FAISS, Elasticsearch, ranking metrics, precision-recall analysis

**LLM / RAG & AI Data Workflows:** Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), prompt engineering, structured extraction, JSON schema, tool calling, embedding-based retrieval, automated data labeling, human-in-the-loop workflows, LLM evaluation, OpenAI API, Google Vertex AI

**Anomaly Detection, Pricing & Forecasting:** anomaly detection, price anomaly detection, anomaly scoring, price regression, uncertainty estimation, confidence scoring, calibration, quantile regression, forecasting, delivery time forecasting, time-aware validation, temporal features

**Data Engineering & Analytics:** Pandas, NumPy, Parquet, scheduled pipelines, Celery, batching, sharding, in-database computation, Apache Superset, Power BI, data quality analysis

**Software Engineering & Observability:** backend engineering, Python application architecture, computer science fundamentals, API design, REST APIs, system integration, Pydantic, type hints, mypy, automated testing, code review, Sentry, Grafana, C++, Ruby on Rails

**Technical Ownership & Delivery:** requirements clarification, metric definition, ML pipeline architecture, technical decision-making, scalable solution design, business trade-off analysis, stakeholder communication

## Education

Pskov State University

Master's degree, Informatics (*Information Systems and Technologies*)

2008 - 2013

## Languages

Russian (*Native*), English (*Upper Intermediate*)