

Irina Nosal

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SUMMARY

AI team lead and engineer with Ph.D., expertise in NLP, matching, search, and LLM for business decisions. 15+ years in Tech (Telecom, InfoSec, ML), 8+ years in software dev (Python, SQL, Matlab, C, Assembler), 4+ years commercial. 5+ years in research, 4+ years in AI/ML/DS and 2+ years in AI/ML product management. [Has 8+ publications](#). [Hirsh Index 4](#).

WORK EXPERIENCE

AI TEAM LEAD, AI ENGINEER — [HAQQ Network](#)

Mar 2024 - present

Blockchain ecosystem HAQQ with capital of \$200 million and more than 200 employees

Expert chatbot for messenger

As Team and Tech lead, AI engineer

- We evolved from a basic vector-based RAG to specialized retrieval methods, including SQL for stats and entity lookup, work with real-time sources.

- Built cross-domain benchmarks and a quality evaluation framework. Coordinated multiple teams.

Voice assistant for messenger

As System Design Architect, LLM engineer

- Developed with OpenAI GPT under the hood. Developed an algorithm for spoken contact name recognition, handling variant spellings from different languages.

Technologies: RAG, Routing, SO, CoT, prompt engineering, domain driven design, ElasticSearch, other vector db, FastAPI, LangChain, Langfuse, LangSmith, RAGAS, Spicy, text2sql, multi-modal agents, Huggingface.

AI/ML ENGINEER, DATA SCIENTIST — [AUTODOC EU](#)

Oct 2022 - Mar 2024

EU top **car-parts e-store** with €1.1B in sales and 5.2M products.

Operating in 27 EU countries, 5000+ employees at 8 sites

AI Solutions for Analytics

As Product manager, LLM engineer

- Developing LLM agents as database co-pilot, Ad-hoc analytics using Azure OpenAI and LangChain.

Matching assortment for e-commerce

As ML engineer

- Completed clustering car-parts based on technical fits and consumer characteristics.

- Developed the algorithm, prepared the dashboard. This enabled the following two projects.

Data coverage for product marketing team

As Product manager, DS

Lead a team to design, implement, and use a data governance system for product marketing. Collaborate with cross-functional teams to translate business requirements into technical solutions. Design and plan system architecture.

- Enabled analytics dept. to achieve complex goals unattainable for 18 months.

- Cut product launch prep time from 2 weeks to 1 day for product managers.

VIO-coverage

As Data Scientist

- An assortment coverage gap assessment system. Matching big data of auto parts clustering and market demand. Updated heatmap of assortment gaps, boosting revenue by 8.7% yearly.

Technologies: Azur OpenAI API, LangChain, Glove, DBSCAN, PCA/TSNE, HuggingFace, GCP, Airflow, SQL, Metabase.

AI/ML ENGINEER — [WELLNITE](#)

Dec 2021 - Oct 2022

Well-being **self-care** and **medtech** startup hit \$17.6M revenue in 2023 with a 67 person team.

- Developed RAG component, data preprocessing, prompt engineering, text summarizing, model tuning.

- Design, develop and implement ML services, deploy to production on Bitbucket, GCP.

- Manage the product and collaborate with members of the support and engineering teams.

Technologies: Flask, NLP, LLMs, GPT OpenAI API, NLTK, HuggingFace, BERT, Converse.

ML ENGINEER — freelance

Oct 2021 - Nov 2021

- For forecasting voltage consumption developed a predictive ML model(LSTM). Accuracy (RMSE) 81.7%.
- Developed prototype of web service for IoT anomaly detection with Autoencoder models.

Technologies: Tensorflow, Streamlit, Anomaly detection, TS forecasting, LSTM, Autoencoders.

ML ENGINEER, DATA SCIENTIST — COMMUDATA

Feb 2021 - Oct 2021

NLP Startup (England, Portugal, Russia). The idea was - determine an author's psychological state from his texts.

- Developed text anomaly detection model and prototype of Log Anomaly Detection web-app.
- Improved the product library with new text-feature extraction functions, resulting in a 7% increase in ROC AUC.

Technologies: Streamlit, Linux, SQL, NLTK, Tensorflow, Gensim, Spacy, Autoencoders, LSTM, PCA/TSNE, TS.

LEAD CYBERSECURITY ENGINEER — PFR in the Komi Republic Jun 2011 - Feb 2021

Regional dept. Pension Fund of Russia (160+ employees in regional HQ, 22 district branches)

- Experienced in collaborating with IT depts., stakeholders, as dept.head and supervised district depts.
- Mentoring, on-boarding, hiring.
- Deployed CyberSecSystems for compliance, developed Anti-FRAUD programs, created role model reducing access time in 10 times and extended access mgmt. system to other regional PRF offices.

Technologies: MS SQL, Linux, VPN, Cryptography, bash.

PROJECTS

DariaAI

As Sr.ML engineer

Navigation chatbot for one of the top exhibition spaces globally (30M+ yearly visitors) website and mobile app (200K+ users). Implemented entity extraction, optimized search engine, and developed search logging and data prep service (annotation, summarizing) using LLMs, enhancing chatbot performance and UX.

EDUCATION

2011 - 2016 PhD (Modeling and Security) at **St. Petersburg Institute for Informatics and Automation Russian Academy of Sciences (SPIIRAS)**

2005 - 2010 Masters Degree (with Honors) at **Syktyvkar State University** ranked top1 in the Komi Republic, Information security specialist

PUBLICATIONS

Nosal, I.A. and Mironov V.V. (2011). "Modeling and Evaluation of Information Security System on the Example of Syktyvkar State University". In: *Information and Security* 14.2, pp. 209–216.

SKILLS

NLP	LLMs, Transformers, GPT, LangChain, BM25, FAISS, Hugging Face, BERT, Spacy, Gensim, Glove, NLTK, prompt engineering, fine-tuning.
Data science	DL, Tensorflow, PyTorch, Prophet, Catboost, Autoencoders, LSTM, PCA, TSNE, Matching, Clustering, Anomaly detection, Time Series, Visualization.
Data	SQL (PostgreSQL, Clickhouse, MS SQL, MySQL), Metabase, BigQuery, Airflow.
Development Base	FastAPI, Flask, Streamlit, Sentry, deploying on GCP, Bitbucket, GitLab and GitHub ci-cd Python, Git, Docker, Linux, bash, Jira.