SAMATOV DENIS

MACHINE LEARNING ENGINEER

SamatovDS   denissamatov470@gmail.com   denis-samatov

SUMMARY

Machine Learning Engineer and Data Scientist specializing in scalable AI solutions for complex real-world challenges. Experienced in designing and deploying end-to-end ML pipelines — from data collection and preprocessing to modeling, evaluation, and production integration. Skilled in optimizing workflows, applying state-of-the-art algorithms, and bridging research with practical implementation to deliver measurable business impact. Thrive in both fast-paced startup environments and large-scale corporate R&D, adapting quickly to evolving project needs while ensuring reliability and scalability.

PROFESSIONAL EXPERIENCE

Analytics and Machine Learning Department, MSUU | ML-engineer   **04.2024 – Present**

- Developed and deployed an internal RAG system improving document retrieval accuracy and speed.
- Built a salary monitoring system for recruitment, enabling targeted recommendations and optimizing hiring efficiency.
- Implemented a multimodal AI candidate evaluation system, boosting recruitment analytics accuracy and efficiency.

Heriot-Watt TPU Center | Data Scientist   **09.2024 – Present**

- Designing tensor-based algorithms to reduce complexity in large spatiotemporal datasets.
- Applied tensor QR decomposition for optimal sensor placement, improving forecasting accuracy and reducing data dimensionality.
- Integrated reinforcement learning into geological exploration tasks, enhancing decision-making and uncertainty management.

TUSUR – LPMiTF | Data Scientist   **06.2023 – 12.2023**

- Built recommendation systems for the Cardiology Research Institute using ML in radiology.
- Automated data cleaning, reducing processing time by 30%.
- Improved prediction accuracy by 25% with new ML algorithms.

Fintech Association | ML-engineer   **08.2023 – 11.2023**

- Contributed to a prompt generator showcased at Finopolis 2023.
- Compiled a large financial dataset and optimized ML model selection.
- Reduced data preparation time by 25% and increased prompt accuracy by 30%.
- Improved offer selection algorithm, cutting false positives by 20%.

Joint Institute for Nuclear Research (JINR) | ML-engineer   **06.2023 – 08.2023**

- Optimized particle track reconstruction algorithms, improving speed by 25%.
- Applied ML for multi-track beam analysis, increasing efficiency and accuracy by 12%.

Cardiology Research Institute | ML-engineer   **06.2023 – 08.2023**

- Developed automatic segmentation algorithms for CT/MRI images.
- Built end-to-end medical image processing pipelines, cutting processing time by 40%.
- Trained UNet / Attention UNet achieving segmentation accuracy of 80%+.
- Applied radiomics to improve early pathology detection by 15%.

EDUCATION

Tomsk Polytechnic University
- Master's Degree, Applied Mathematics and Computer Science · 2024 – Present
- Bachelor's Degree, Applied Mathematics and Computer Science · 2020 – 2024

Skoltech (Skolkovo Institute of Science and Technology)
- Professional Development Course — Generative Models based on Adversarial Learning · 2024

Tomsk Polytechnic University
- Diploma of Professional Retraining — Data Science and Machine Learning · 2023 – 2024
- (Granted the right to professional activity in Data Science & ML)

ADDITIONAL INFORMATION

Publications

- Beam Parameters Restoration at the NICA Accelerator Complex Based on the Beam Position Monitor Data (with M. Shandov). Proceedings of START, Joint Institute for Nuclear Research, 2023.
- Automatic Segmentation of Epicardial Fat and Quantitative Evaluation of Radiomic Parameters in Cardiac CT. Proceedings of the XXI International Conference "Perspectives of Fundamental Sciences Development", 2024.
- Capabilities of Radiomic Analysis of Cardiac MRI Images in Cine Mode for Identifying Post-Infarction Areas. Digital Diagnostics Journal.
- EPIFAT — Module for Automatic Segmentation of Epicardial Adipose Tissue on Cardiac CT Images (with K.V. Zavadovsky, B.S. Merzlikin, et al.). Certificate of State Registration of Computer Program No. 2025610317, 2025.
- Piskunov S.A., Pokatilov V.V., Shishaev G., Samatov D. Approach to Identifying Key Areas for Further Reservoir Study Using Tensor-Based Modal Decomposition. Conference Paper, August 2025.

Achievements

- Winner, Artificial Intelligence and Machine Learning Track, FINOdays Hackathon.
- Special Nomination Winner, National Technology Olympiad (Student Track, Computer Vision Technologies and Digital Services).
- Prize Winner, Hackathon at MIPT Educational Forum in AI, Mathematics, and Physics.
- Second-degree Diploma, presentation "Automatic Segmentation of Epicardial Fat and Quantitative Assessment of Radiomic Parameters in Cardiac CT", International Conference Perspectives of Fundamental Sciences Development, 2024.
- Presenter, Congress of the Russian Society of Radiologists and Radiologists, Moscow, 2024.
- Participant, ASCOMP School, Innopolis, 2024.
- Participant, ICOMP Conference (International Conference on Computational Optimization), Innopolis, 2024.
- Participant, School-Conference on Tensor Methods in Mathematics and AI, Shenzhen, China, 2024.
- Participant, Poljak School of Optimization, Innopolis, 2025.
- Participant, AIRI Summer School, Tomsk, 2025.
- Participant, Skoltech–HIT Summer School, Harbin (remote), 2025.

Topics of Qualification Works

- AI for Medical Imaging — Development of machine learning and radiomics methods for segmentation and quantitative analysis of cardiovascular images.
- Applied NLP in Finance — Neural network–based recognition and analysis of Russian-language financial reports.
- Computational Physics & Engineering — Machine learning algorithms for beam parameter restoration at the NICA accelerator complex.
- Quantitative Finance — Option strategies and their practical applications.
- Tensor-Based Methods for High-Dimensional Systems — Reduced-order modeling, forecasting, and optimal sparse sensor placement via tensor modal decomposition and QR-based selection.