Nikolai Mozgovoi

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Education

Ph.D. **Don State Technical University (DSTU)**, Computer Science and Information Processes
Department of Cybersecurity of Information Systems of DSTU
Rostov-on-Don, Russia
Sept 2025 – present

M.Sc. **Don State Technical University (DSTU)**, Intelligent Media Technologies
Master's Department of DSTU
Rostov-on-Don, Russia
Sept 2023 – July 2025

- Thesis: Research on the utilisation of neural networks for generating 3D animation of humanoid characters
- Advisor: Associate Professor Evgeniy Ladosha
- GPA: 5/5.00, (Hons)

B.S **Don State Technical University (DSTU)**, Information Systems and Technology
Department of Media Communications and Multimedia Technology of DSTU
Rostov-on-Don, Russia
Sept 2019 – July 2023

- Thesis: Creation and Animation of a 3D Character Using Visual Programming (via Nodes)
- Advisor: Associate Professor Evgeniy Ladosha
- GPA: 5/5.00, (Hons)

Experience

LLC Commercial Bank RostFinance, Junior DevOps/DataOps & Analytics Engineer
Rostov-on-Don, Russia
Nov 2023 – Dec 2025
2 years 2 months

- Deployed, administered, and supported services in a geo-distributed Kubernetes cluster
- Monitored cluster health in Grafana and performed routine cluster maintenance
- Administered PostgreSQL, MSSQL, and MySQL at scale (user management, query optimization, advanced window functions)
- Designed, implemented, and maintained ETL pipelines in Apache Airflow (full & incremental loads into an enterprise data warehouse)
- Implemented data validation and reconciliation with automated anomaly detection, reducing data discrepancies by ~40%.
- Built and maintained interactive dashboards, charts, and tables in Apache Superset for reporting and executive decision-making, cutting manual effort by ~75% and improving decision-making latency
- Developed proprietary inference optimization reducing latency by 73% compared to baseline
- Maintained legacy Java microservices codebases (support, bug fixes, and stability improvements)
- Developed internal banking analytics microservices in Python
- Developed a computer vision ML system to detect customer visits in the bank's operation halls
- Fine-tuned a wav2vec model to solve internal banking tasks

Don State Technical University (DSTU), Teaching Assistant (TA) at Department of Cybersecurity of Information Systems of DSTU
Rostov-on-Don, Russia
Oct 2025 – present
4 months

Projects

SMOG Jan 2025

Semantic Motion Generation (SMoG) is a state-of-the-art text-to-motion synthesis model that leverages CLIP semantics and Kolmogorov-Arnold Network (KAN)-enhanced transformers to generate realistic, diverse 3D human motions from textual descriptions

- Replaces standard Transformer linear layers with KANLayers (trainable B-spline nonlinearities) instead of MLP-style linear layers, aiming for more expressive feature learning and motion–text alignment
- Achieved higher R@5, much lower MMD and lower FCD over baseline MotionCLIP implementation

SCADE-Net Jan 2026

Single-Center Attention and Defocus-Enhanced Network for Generalized Deepfake Detection

- Keeps an ultra-lightweight footprint (~28,113 trainable parameters) while outperforming the Meso-4 baseline (27,977 params)
- Improves FaceForensics++ DFD (C23) AUC from 0.945 (Meso-4) to 0.977
- Uses Efficient Channel Attention (ECA) specifically for parameter efficiency
- Adds defocus blur maps as an extra input modality to exploit depth-of-field inconsistencies described as a deepfake cue

International Experience

Elementary Chinese study in Summer Semester of 2024 Harbin, P. R. China

College of International Education, Harbin Institute of Technology, No. 92 West Dazhi Street, Nangang District, Harbin, 150001, P. R. China. July 2024

Extracurricular Activities

Hackathon on Artificial Intelligence

Participation in a Hackathon on Artificial Intelligence led by experts from Higher School of Economics and Promsvyazbank

Creation of 3D Relief Map of Russia

Headed a group for the development of a three-dimensional relief map of Russian territories commissioned by the Department of Media Technologies of DSTU (creation of a 3D relief model from a 2D image, texturing, and material creation)

Additive Tech Demo Lectural Course

Conducted a course of lectures at the 'Tochka Kipeniya' (Rostov-on-Don, Sedova str. 6/3) with a presentation of the work of 3D-scanner 'Thor3D Calibry Scanner' and 3D-printer 'Picaso 3D Designer X' on the topic 'Additive technologies' on the practical task of the company 'UBiTech'

Additive Tech Lectural Course

On the initiative of the Rostov Regional Entrepreneurship Support Agency (ANO IFC 'RRAPP') with the support of the Ministry of Economic Development of the Rostov region and the Government of the Rostov region held 2 lectures for students of Donetsk technical school on the topic 'Prospects and opportunities of additive technologies. 3D-modelling and printing.'

Skills

Languages: Python, SQL, Julia

ML Frameworks: PyTorch, JAX, Triton, ONNX, Scikit-learn, Numpy, Pandas, Matplotlib, OpenCV, SQLAlchemy, nltk, Transformers, Polars, SpaCy, XgBoost, LightGBM, CatBoost

Infrastructure: Kubernetes, Git, Docker, Ansible, GitLab CI/CD (ArgoCD), Helm, Grafana, RabbitMQ, Redis

Data Tools: Apache Airflow, Apache Superset, dbt

Research Areas: Neural architecture search, Multimodal Generative models, Natural Language Processing, Computer Vision, DeepFake Detection methods