Konstantin Amelichev

I've worked on researching, building products, and developing infrastructure. I'm quick to learn and specialize in backend tech. I can handle everything from early research to making high-traffic systems run smoothly. I have solid engineering skills and learned from the best CS universities.

I'm looking for opportunities in the computer vision and/or computer graphics industry.

Contacts

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Languages: English (advanced), Russian (native), French (beginner)

Work Experience

Neiro.ai (*2022 (autumn) - nowadays*)
Backend development for AI startup. Increased availability and observability of company's ML API's using cloud solutions and custom API gateway for REST and GRPC clients with support of large media files. Feature development for AI chatbot application and generative AI web studio. Initiated launch of several projects, e.g. block-style video editor for ad creation.

High Nu (*2022 (spring-summer)*)
Infrastructure development for high-frequency trading startup. I increased number of market data sources using cryptocurrency exchanges rest/websocket API's, improved overall performance through fixing bottlenecks, set up process for continuous data processing, trading, simulation, alerting and monitoring.

Tinkoff.ru (*2020 - 2022*)
High-load services in advertising technologies (e.g. DMP, DSP in real-time bidding model), used for personal in-app recommendations. Improved admin console functionality through usage of macroses for custom creatives. Integrated new data providers for better geographic targeting. Created like/save mechanics for personal feed. R&D of MVP for the search of creatives based on image content.

Teaching (*2019 - 2023*)
Teacher in Tinkoff Edu. Lecturer in advanced algorithms for competitive programming (3 years, 240 students total) and basic algorithms for bachelor students (1 semester, 350 students total).
Author and/or developer of 10+ problems for Olympiads in programming.

Education

Institute Polytechnique de Paris, MScT. (Paris, *2023 - 2025*)
"AI & advanced Visual Computing" program, with focus on solving visual tasks, such as: Shape representation, Computer vision, Image synthesis, Computer animation.

Higher School of Economics, BSc. (Moscow, *2019 - 2023*)
"Applied math and informatics" program with specialization is distributed systems. Thesis on model checking for formal verification of distributed system.

Relevant courses
3d Computer vision
Machine learning
Algorithms and data structures
Harvard's CS50 "Introduction to Game development"
Udemy "Deep Learning and Computer vision"

You can find more certificates on my my linkedin page!

Projects

SimSearch (*january 2022 - august 2022*).
Coursework paper about service developed in Tinkoff.ru. Research of ANN problem. Presenting architecture of search engine for any type of object. This approach led to a content-based image search service.
Perlin noise heatmap (*summer 2022*).
Visualization of Perlin noise with heatmap and marching squares technique. Rust OpenGL interactive application.
3d-renderer from scratch (*august 2020 - june 2021*).
Library for processing 3d scenes and rendering them in real-time. Uses only "set pixel" graphic primitive from SFML library, rasterization is self-written as well as scene manager.
Digitalization of orienteering maps (*summer 2020 - WIP*).
Labeled image dataset, setup augmentation pipeline for semantic segmentation problem. Tested different approaches, currently the best is one using U-Net.
OpenCV mini-projects in Rust (*summer 2021*).
Rust bindings for OpenCV used for sketch filter, shape detection, template search.

Achievements

Second Award in ICPC 1/4, Moscow, 2020
Gold prize winner All-Russian school programming Olympiad 2019
Silver prize winner All-Russian school programming Olympiad 2018
Candidate for Master of Sports in orienteering

Skills

Tech stack: C++, Rust, Python, Go, Git, Linux.
Libraries: pytorch, keras, OpenCV, numpy, pandas, matplotlib, scikit-learn, STL, Boost.
Tools: Cmake, GDB, Valgrind, Gperf, Lua, protobuf, grpc, grpc-gateway, prometheus, graphite, ffmpeg, Unity, Markdown, Latex.
Infrastructure: Docker, k8s. CI/CD, AWS/GCP, ansible
Databases: postgreSQL, Redis, mongoDB, Aerospike, BigQuery.

Open Source Contribution

DSLab: formal verification of distributed systems with model checker.
grpc-gateway: handling media data with multipart/form-data and macroses.
knot-resolver: anti-censorship feature for DNS resolver.

There are other interesting things on my github: tower-defense game, AI for playing codenames, Russian CS exam problems generator, and much more!