Vinogradov Sergey

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Experience

Beagle, Senior Backend Developer — Belgrade, Serbia — Jun 2025 – Ongoing

- Built template system for documents processing with flexible configuration
- Implemented Excel/CSV export functionality with advanced filtering capabilities
- Developed complex search and highlight logic with persistent annotation storage and retrieval
- Improved dataset indexing system with user-specific parameters and multi-format document support

SberDevices, Computer Vision Engineer — Moscow, Russia — Apr 2025 – Jun 2025

- Developed an algorithm for detecting damaged QR-codes based on alignment patterns grid
- Improved the binarization stage of the QR-code detection pipeline, which resulted in increased detection stability
- Used graph algorithms to detect corrupted finder and alignment patterns

QLAN.AI, Technical Lead — Moscow, Russia — Mar 2025 – Jun 2025

- Developed a micro-service architecture for processing thermal data from a large number of cameras and sensors
- Worked with Grafana API, made functionality for enabling and disabling metrics, creating and deleting dashboards and panels using API calls
- Made a selenium-based tool for interaction with the Mobotix web interface to receive and send different zone parameters to the camera
- Managed backend development team with 3 engineers

ReML, Computer Vision Engineer / Backend Developer — Moscow, Russia — Feb 2025 – May 2025

- Developed backend micro-services for PPE detection with low latency
- Added support for multiple RTSP-stream processing using Gstreamer
- Responsible for Spark-based post-processing module to create events for violation detections on camera

UBO Group, Computer Vision Engineer — Moscow, Russia — Oct 2024 – Mar 2025

- Developed face-recognition module with FAISS database
- Worked with various vision models and MLLM-s, fine-tuned NNs for segmentation and tracking
- Developed an app to get highlights from a hockey game video for a specific player
- Implemented various filters and algorithms to improve recognition accuracy
- Deployed models to production, did inference testing and optimizations

ScaleGen AI, Backend Developer — Mumbai, India (remote) — Oct 2023 – Oct 2024

- Developed API Gateway setup pipelines using AWS and GCP
- Developed billing service and price estimation for various cloud computing instances
- Responsible for main CLI project
- Added support for on-prem instances, including all networking setup

Huawei, Graphics Engineer — Moscow, Russia
Jul 2021 – Oct 2023

- Built ground-truth raytracer to verify approximations for main RT pipeline
- Improved Vulkan API validation layers
- Added shaders for different materials processing in PBR algorithms
- Responsible for Python CI/CD framework for mobile devices testing and performance measurements

Education

MS **School of Data Analysis, Department of Innovation and High Technology, MIPT + Yandex**, Data Science — Sept. 2023 – Ongoing

- **Courses:** CV (2D and 3D), Self-Driving cars, CUDA, MLOps and DevOps courses
- Developed a startup for travellers for efficient route building using AI
- Diploma on the topic "Method for robust decoding of damaged QR codes with nonlinear geometric distortions for use on mobile devices"

BS **Department of Radio Engineering and Cybernetics, MIPT**, Mathematics and Computer Science — Sept. 2019 – Aug. 2023

- Mostly involved in compiler and architecture simulator development
- Participated in mobile development and AI hackathons
- Diploma on the topic "Mesh Simplification using algorithms and GNNs"

Projects

RCCarRemoteControl — RCCarRemoteControl

- Remote car with Arduino UNO (or Arduino Micro), controlled via Bluetooth
- Aruco marker based localization in ROS2
- **Tools used:** Python, Arduino, ROS2

SmartCarProject — SmartCarProject

- OpenGL based self-driving car simulator using RL and CV
- **Tools used:** C++, OpenGL, Assimp, LibTorch, Q-Learning

Scheme language with LLVM IR Generator and simple Raytracer — SchemeRaytracer

- Raytracer on self-made functional programming language with LLVM IR Frontend and C++/OpenGL Backend
- **Tools used:** C++, C, Google Test, GNU Bison, GNU Flex, LLVM IR, OpenGL

Skills

Science: Math, Linear Algebra, Probability and statistics, Physics and Theoretical mechanics, Algorithms, Graph Algorithms, Concurrency, Deep Learning, Computer Vision, NLP, Self-driving cars, Reinforcement Learning

Languages: C++, C, Assembly, Python, Dart/Flutter, PHP, JavaScript

Tools: PostgreSQL, Docker, Ansible, Spark, Kafka and RabbitMQ, MongoDB, S3 storage, NGINX, Prometheus, Grafana, Loki, Promtail, Swagger, Bootstrap, Selenium

ML Tools: PyTorch, LibTorch, PyTorch Lightning, Tensorflow, OpenCV, GGML, Numpy, Scipy

Graphics: OpenGL, Vulkan, OpenCL, CUDA, RenderDoc, SmartPerf

Robotics: ROS2, Open3D, Carla, Foxglove, Calibration, MPCC

Cloud and Deploy: AWS, GCP, Microsoft Azure, Datacrunch, Gitlab CI/CD

Compilers: Clang, LLVM IR, GNU Bison, GNU Flex