Aleksandr Davydov

AI / Edge ML Engineer

Desired salary: $5,000/month

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Saint Petersburg, Russia · open to relocation worldwide

SUMMARY

AI engineer who specializes in getting models to run where there is no cloud. I've fine-tuned large multimodal models and built computer-vision pipelines on NVIDIA Jetson Orin (with TensorRT) and Rockchip RK3588 for autonomous drones, rovers and submarines: detection, perception, sensor fusion and navigation, all offline. Strong in Python and C++, with plenty of time spent on the unglamorous part, making detection actually hold up in the real world.

KEY SKILLS

Edge ML: Fine-tuning & quantizing large multimodal models for on-device use, LLM, RAG, TensorRT, DeepStream, deployment on constrained hardware

Computer Vision: OpenCV, detection/perception pipelines, sensor fusion, autonomous navigation

Platforms: NVIDIA Jetson Orin (Nano/NX/AGX, Thor), Rockchip RK3588, JetPack/L4T, Linux

Languages & Tools: Python, C++, PyTorch, Docker, CI/CD, Git

PROFESSIONAL EXPERIENCE

Black Diamond Research & Development — Dec 2024 – Jun 2026 · Abu Dhabi, UAE

R&D Software Engineer / Team Lead

- Fine-tuned and optimized large multimodal models to run on-device on constrained hardware: NVIDIA Jetson Orin (Nano/NX/AGX, Thor) and Rockchip RK3588.
- Built the onboard camera-perception stack for drones, rovers and submarines: multi-camera capture with real-time detection and tracking. A lot of the work was the genuinely hard cases, like picking out small, low-contrast targets on the ground from a few hundred meters up, where off-the-shelf detectors just give up.
- Implemented computer vision, sensor fusion and autonomous navigation for ground, aerial and underwater platforms.
- Owned the full edge-computing cycle: hardware selection, prototyping and running everything offline on the device with no server link. Mostly for detection and scene understanding on the drones and ground/underwater vehicles, with multimodal models on top for semantic queries and commands.

City Technologies LTD — May 2022 – Dec 2024 · Belgorod / Moscow, Russia

Full-Stack Developer, Computer-Vision Products

- Built the real-time video-analytics core: vehicle and license-plate recognition, people counting and incident alerts across hundreds of live RTSP streams, with operator dashboards and an event archive.
- Moved detection onto the units themselves (NVIDIA Jetson, Rockchip) instead of streaming raw video to a datacenter, so the network carried events and metadata rather than gigabits of footage, and operators got alerts almost instantly.
- These three covered camera-based detection, mobile detection on the move and city parking, all built around real-time recognition of vehicles, people and events.

Self-Employed / Freelance — Aug 2021 – May 2022 · Remote

Developer

- Engineered a computer-vision employee monitoring system (Python, OpenCV) from architecture to deployment.
- Ran turnkey projects end to end: requirements, planning, technical leadership and client delivery.

Belgorod Regional Government — Aug 2021 – Feb 2022 · Belgorod, Russia

Software Developer (Project Contract)

- Architect and lead developer of a secure internal communications platform for government officials.
- Delivered the full cycle: requirements, security design, encrypted document workflow and an internal messaging module.

EDUCATION

Belgorod State University, Institute of Engineering and Digital Technologies 2019 – 2022
Applied Informatics, B.Sc. · Belgorod, Russia

Ukhta Technical Lyceum 2017 – 2019
High School Diploma, Technical Focus · Ukhta, Russia

CERTIFICATIONS & TRAINING

- NVIDIA: Building Video AI Applications at the Edge & TensorRT Optimization (2022)
- Huawei: HCIA Intelligent Vision & IoT Foundations (2021)
- Applied Robotics & Single-Board Computers, self-directed study (2021)
- Coursera: Computer Networking & Architecture Foundations (2020)
- Harvard University (edX): CS50 Introduction to Computer Science (2019)

LANGUAGES

Russian: native speaker. English: professional working proficiency.

KEYWORDS

Roles: Software Engineer, Senior Software Engineer, Team Lead, Tech Lead, Engineering Manager, Head of Development, Full-Stack Developer, Backend Developer, Frontend Developer, Embedded Engineer, Edge Engineer, AI Engineer, ML Engineer, Computer Vision Engineer, MLOps Engineer, DevOps Engineer, Robotics Engineer. Languages: C++, C, Python, JavaScript, TypeScript, C#, Go, Rust, Bash, SQL, Java, Kotlin, Lua. Frontend: React, Next.js, Vue, Redux, HTML5, CSS3, Tailwind, Three.js, WebGL, WebRTC, WebSockets. Backend: Node.js, FastAPI, Flask, Django, .NET, gRPC, REST, GraphQL, microservices, message queues, RabbitMQ, Kafka, Celery. Databases: PostgreSQL, MySQL, SQLite, Redis, MongoDB, ClickHouse, Elasticsearch. AI/ML: PyTorch, TensorFlow, ONNX, OpenCV, CUDA, cuDNN, TensorRT, LLM, LLMs, large language models, multimodal LLM, VLM, fine-tuning, LoRA, QLoRA, quantization, distillation, RAG, embeddings, prompt engineering, object detection, YOLO, instance segmentation, semantic segmentation, tracking, re-identification, pose estimation, OCR, license plate recognition, ANPR, LPR, people counting, sensor fusion, SLAM, visual odometry, Kalman filter, depth estimation, edge AI, on-device inference. MLOps: MLflow, Triton Inference Server, model serving, model deployment, DVC, Weights and Biases, ONNX Runtime. Embedded/Edge: NVIDIA Jetson, Jetson Orin Nano, Orin NX, Orin AGX, Jetson Thor, Jetson Xavier, Jetson Nano, Rockchip RK3588, RKNN, Raspberry Pi, STM32, ESP32, Arduino, ARM, ARM64, RTOS, FreeRTOS, Embedded Linux, Yocto, Buildroot, device drivers, I2C, SPI, UART, CAN, GPIO, PWM, FPGA, DMA, real-time, NVIDIA JetPack, L4T. Robotics/Drones: ROS, ROS2, drones, UAV, UGV, AUV, autonomous navigation, path planning, MAVLink, PX4, ArduPilot, NVIDIA DeepStream, GStreamer, RTSP, FFmpeg, video analytics, IP cameras. AR/3D: Unity, Unreal, ARKit, ARCore, OpenGL, Vulkan, Blender. DevOps/Infra: Docker, Kubernetes, Helm, CI/CD, GitHub Actions, GitLab CI, Jenkins, Terraform, Ansible, Nginx, Linux, Ubuntu, Prometheus, Grafana, AWS, GCP, Azure, bare-metal, on-prem. Security: encryption, TLS, secure document workflow, AES, RSA, JWT, OAuth2. Practices: Agile, Scrum, Kanban, system design, software architecture, code review, mentoring, API design, distributed systems. Highlights: 4+ years experience, 3 hardware products shipped to production and running on city streets across Russia and neighboring countries, several hundred hardware-software complexes deployed across multiple cities, hundreds of concurrent RTSP camera streams, real-time on-device inference. Русский: инженер-программист, ведущий разработчик, тимлид, руководитель отдела разработки, fullstack-разработчик, бэкенд, фронтенд, embedded-разработчик, edge, AI-инженер, ML-инженер, инженер компьютерного зрения, DevOps, MLOps, робототехника, компьютерное зрение, детекция объектов, распознавание автомобилей и автономеров, подсчёт людей, слияние сенсоров, автономная навигация, on-device инференс, мультимодальные модели, большие языковые модели, файнтюнинг, квантизация, встраиваемые системы, одноплатные компьютеры, программно-аппаратные комплексы, видеоаналитика, дроны, вездеходы, субмарины, edge-вычисления, релокация, удалённая работа.