

Arda Gerceker

+90 533 287 26 46 | gercekerarda@gmail.com | linkedin.com/in/ardagerceker | Ankara, Turkey (Open to relocation)

PROFESSIONAL SUMMARY

Software Engineer & AI Engineer with 3 years of production experience in Edge AI, computer vision, and real-time inference systems. Skilled in LLM integration, RAG pipelines, multimodal AI (CLIP), and vector search — combined with deep C++/Python expertise on NVIDIA Jetson hardware. Experienced in end-to-end ownership from model training to production deployment.

EXPERIENCE

Software Engineer

Ekin Smart City

Jul. 2024 – May 2026

Ankara, Turkey (Full-Time)

- Architected real-time multi-camera DeepStream/TensorRT inference pipelines in C++ on NVIDIA Jetson (Orin, Xavier), implementing 14 violation-detection models with 99%+ accuracy across 50+ production deployments.
- Optimized deep learning models (PyTorch → ONNX → TensorRT) via FP16/INT8 quantization, achieving 2x+ inference throughput on edge hardware.
- Built a unified low-latency camera acquisition app in C++ supporting 10+ industrial camera SDKs; implemented zero-copy FD-based frame transfer reducing latency ~80% (~150ms → ~30ms).
- Built a multimodal semantic image search system using CLIP and FAISS, enabling natural language queries over large image corpora with millisecond retrieval.
- Designed an LLM-powered RAG pipeline (Qwen2.5, Ollama) for automatic summarization and Q&A over company email and meeting data; fully local deployment on edge hardware via Docker.
- Provided on-site support across 50+ deployed Jetson edge devices, diagnosing CPU/GPU/memory bottlenecks and maintaining 99%+ system uptime.

Embedded Software Engineer

MILMAST Telescopic Mast Systems

Sep. 2023 – Jun. 2024

Ankara, Turkey (Part-Time)

- Engineered embedded firmware for STM32 and ARM Cortex-M platforms, implementing CAN/CANopen, RS-422/485, UART, USB, I2C, SPI and ADC peripherals for defense industry telescopic mast control systems.
- Designed and deployed automated hardware-in-the-loop (HIL) board test stations for 6 PCB variants, enabling repeatable pass/fail validation across production batches.

PROJECTS

Real-Time Traffic Violation Detection & Inference System | C++, DeepStream, TensorRT, Jetson Orin/Xavier

- 14 violation types; fixed pole-mounted and mobile vehicle-mounted edge AI; multi-sensor fusion; 99%+ accuracy; 50+ production deployments.

Low-Latency Camera Acquisition & Configuration App | C++, GStreamer, ArgusCameraAPI, Linux, REST API

- Implemented a unified camera acquisition app supporting 10+ industrial camera models (Basler, Alvium, Sony, JAI, MIPI CSI-2, IP); exposed REST endpoints for snapshot, live RTSP stream and remote config.
- Zero-copy FD-based frame transfer reduced capture-to-write latency ~80% (~150ms → ~30ms); adopted across all Ekin products.

PCB AOI Defect Detection System | Python, C++, YOLOv11, TensorRT, OpenCV, MongoDB, Docker

- End-to-end automated optical inspection system: trained YOLOv11 with FP16/INT8 TensorRT optimization; combined CNN feature extraction, SIFT keypoint matching and SSIM golden-reference comparison for defect localization.
- Full-stack inspection UI with MongoDB backend and heatmap visualization; 95%+ defect detection accuracy; deployed via Docker.

Semantic Image Search System | Python, CLIP, HuggingFace Transformers, FAISS, FastAPI, Docker

- Designed a natural language visual search system over a large image corpus using CLIP's text and vision encoders to embed queries and images into a shared 512-dim vector space.
- Indexed with FAISS for cosine similarity retrieval in milliseconds; supports complex semantic queries beyond keyword matching.

Email & Meeting Summary System | *Python, Ollama, Qwen2.5, RAG, Vector Database, Docker*

- Built an LLM-powered RAG pipeline for automatic summarization and Q&A over company email and meeting data; documents chunked and indexed in a vector database for semantic retrieval.
- Fully local deployment on edge hardware via Ollama and Docker; planned extension: custom MCP endpoints replacing RAG layer.

TECHNICAL SKILLS

Edge AI & Video Pipelines: NVIDIA DeepStream, GStreamer, TensorRT, ONNX Runtime, OpenCV, PyTorch, YOLO, H.264/H.265, RTSP/UDP, Zero-Copy Processing

AI / LLM & NLP: LLMs (Ollama, Qwen2.5), RAG Pipelines, Vector Databases (FAISS, Qdrant), Embeddings, CLIP, HuggingFace Transformers, Multimodal AI, Prompt Engineering, SQL/PostgreSQL

Hardware Platforms: NVIDIA Jetson (Orin, Xavier), Embedded Linux, STM32, ARM Cortex-M; industrial cameras (MIPI CSI-2, USB, IP, GigE)

Languages & Tools: C++, Python, CMake, CUDA, Docker, Linux (Ubuntu), systemd, Git, REST API, CI/CD Pipelines

AI Tools & Agents: Claude Code, Cursor, Gemini — agentic workflows, sub-agent orchestration, MCP integrations, custom skills; n8n for workflow automation

Linux Systems: Ubuntu/Embedded Linux administration, systemd services, performance profiling (CPU/GPU/memory), networking (RTSP/UDP/REST), CLI diagnostics, remote system management

Customer & Solutions: Technical demos & presentations, proof-of-concept (POC) development, on-site installation & integration support, customer requirements gathering, cross-functional collaboration (engineering-sales-customer)

EDUCATION

Ankara University <i>M.Sc. Informatics</i>	Ankara, Turkey 2026 – Present
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Bulent Ecevit University <i>B.Sc. Electrical & Electronics Engineering — GPA: 3.07</i> • Washington Accord Accredited EUR-ACE Labeled	Turkey 2019 – 2024
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NOVA School of Science and Technology <i>B.Sc. Electrical & Computer Engineering — International Exchange Student</i>	Lisbon, Portugal 2021 – 2022
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ADDITIONAL EXPERIENCE

Founder & Operator <i>Edeftro.com</i> • Built and commercialized a SaaS product, acquiring 6 paying customers; managed end-to-end sales cycle, client onboarding, and ongoing technical support.	Jan. 2026 – Present Remote
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Founder & Operator <i>Regra Medya</i> • Independently acquired and managed 24 clients, delivering web design, social media management, and digital advertising services; handled full sales cycle from prospecting and pitching to delivery and account management.	2018 – 2025 Ankara, Turkey
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J1 Student Programme <i>United States</i> • Completed two consecutive J1 work-and-travel programs, gaining international professional and cultural experience in the United States.	2022 – 2023 <i>Knoxville, TN (2022) · Boston, MA (2023)</i>
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CERTIFICATIONS & AWARDS

Washington Accord Engineering Degree Accreditation Certificate — The International Engineering Alliance
EUR-ACE Label — ENAEE (European Network for the Accreditation of Engineering Education)
1st Place — **2022 NASA/AAS CanSat Remote Demonstration Division** — GRIZU-263 Space Team