

PROFILE

8+ years focused on software architecture and product development. I have worked across projects and teams of very different styles, and I enjoy taking ownership and critical roles in large-scale work. I practice **Software & AI Engineering** with one principle: a solid architecture first, then the technical direction of AI agents.

EXPERIENCE

3+ YEARS PROFESSIONAL

SOFTWARE & AI ENGINEER

02.2024 — TODAY

Kentkart R&D · İzmir

Responsible for **AI & Python development** across the R&D department: test applications, **AI-based applications and model training**.

Test & simulation tooling — owning the scoping and development of the desktop simulators and test tools used daily by production, technical service and domestic / international field teams.

UWB free-flow program — system architect & project manager on the TÜBİTAK / TEYDEB-funded, patented ultra-wideband positioning R&D; owning the software and architecture: anchor firmware in C, the native iOS Nearby Interaction tag side, and PySide6 monitoring apps with a zero-hardware simulator.

AI & model training — responsible for the fully on-device, real-time face recognition platform on the i.MX 8M Plus NPU; INT8-quantized SSD/MobileNetV2 + FaceNet, custom Linux-level CPU optimization.

CAN Bus · J1939 — development lead for the standards-correct generator & simulator pair (20 PGNs / ~30 SPNs) on PC and embedded Linux.

R&D INTERN ENGINEER

07.2023 — 10.2023

Schneider Electric

Test environment preparation, execution and result analysis (MATLAB, LabVIEW, Excel macros).

EDUCATION

THEORY UNDER THE PRACTICE

ELECTRICAL & ELECTRONICS ENG. M.SC.

2025 — TODAY

Katip Çelebi University

Focus: **Model Training · Machine Learning · Deep Learning · NLP**

ELECTRICAL & ELECTRONICS ENG. B.SC.

2018 — 2023

Ege University

Major: **Communication Systems**

IN NUMBERS

8+

YEARS HANDS-ON CODING

3+

YEARS PROFESSIONAL

10+

PUBLISHED APPS

5+

COMPANIES TRAINED & CONSULTED

SKILLS

FEATURED DISCIPLINES

AI ORCHESTRATION & AGENTIC SYSTEMS

AGENTIC · LLM-NATIVE

Multi-agent architectures in production — orchestration of specialized agent crews under an LLM planner/executor architecture; dependency resolution, parallel task groups and Vision QC process design.

Advanced prompt & context infrastructure — scalable system design on memory architecture, structured output, model-aware routing, sandwich prompting, RAG, MCP & tool use.

Model-agnostic dispatch systems — 8+ image/video engines unified behind a single prompt surface; manifest-driven, capability-gated orchestration.

A modern workflow on frontier tooling — Claude Code, Codex and generative-AI technologies actively integrated into the daily development loop.

SOFTWARE ENGINEERING & ARCHITECTURE

SYSTEMS · PATTERNS

Languages & platforms — Python · Swift / SwiftUI · C# · JavaScript (React, Next.js) · C/C++; iOS, web, desktop.

Architecture-first approach — clean N-layer design, MVC / MVVM / VIPER; DI, Factory, Builder, Unit of Work.

Systems — RESTful API design, async & event-driven programming, real-time data, embedded Linux.

MODEL TRAINING & DATA

ML · DL · RESEARCH

Model training & fine-tuning — PyTorch, TensorFlow/Keras, scikit-learn, CatBoost / LightGBM / XGBoost; stratified CV, ROC-AUC.

Edge & optimization — metric learning, stacked generalization, INT8 quantization, NPU / Core ML deployment.

Data analysis & tooling — pandas, NumPy, advanced SQL (window functions, CTEs); MSSQL, MongoDB, Firestore, Supabase.

CERTIFICATIONS

FOUNDATIONS

.NET Certification Program — Bilge Adam Academy · 2020–2021 320h

20486 ASP.NET MVC 5 Web Applications — Microsoft 2020 MCA

20480 HTML5 with JavaScript & CSS3 — Microsoft MCA 2020

UiPath RPA Education Certificate 2020

PORTFOLIO

SELECTED WORKS ↗

ALL PROJECTS ↗

MINDPLACE

2025 — BUILDING

A comprehensive **multi-agent AI platform** carrying 20+ specialized pipelines for film & animation production. The architecture spans task-oriented agent crews under an LLM planner/executor, per-keyframe Vision QC mechanisms, and a model-agnostic dispatch layer running across 8+ generative engines.

EXPLORE ↗

UWB · NEARBY INTERACTION

2024 — TODAY

End-to-end free-flow access & positioning system: a high-precision (± 10 cm, 4–5 fixes/s) design on DS-TWR Time-of-Flight and PDoA azimuth. Within it: C firmware for the anchor hardware, native iOS tag integration on user devices, a PySide6 monitoring suite for operations, and a zero-hardware simulator that streamlines testing.

GITHUB ↗

NEURAL META-LEARNER

2025

Stacked generalization & model optimization: a neural meta-head over a CatBoost base lifts F1 by 2.5 points (to 89.8%) and reaches 96% ROC-AUC. A high-performing ML model approved by an academic jury.

GITHUB ↗

CAN BUS · J1939 SUITE

2023

Generator + monitor desktop pair speaking standards-correct 29-bit J1939 over SocketCAN (20 PGNs / ~30 SPNs); real industry traffic, with the two systems talking across Linux & Windows platforms.

GITHUB ↗

TRAVELERAPP · PACER

2024 — TODAY

Two AI-based travel & exploration apps, built and shipped: an AI-orchestrated, location-grounded discovery pipeline (schema-constrained LLM in edge functions) plus HealthKit-synced, Kalman-filtered route analytics.

TRAVELERAPP ↗

PACER ↗

FACE RECOGNITION · I.MX8 NPU

2024

NPU-accelerated real-time recognition (Edge AI): an INT8 SSD/MobileNetV2 detector + FaceNet embedder (VX delegate) running fully on local hardware, cloud-free. Optimizing the models for the NPU yields ~20× the speed of standard CPU-based processing.

GITHUB ↗

COMPARATIVE ML EVALUATION

2025

Comprehensive model evaluation under a single controlled protocol: leakage-protected feature engineering and a systematic analysis of 8 classifiers. RandomizedSearchCV tuning took CatBoost to 80.6% accuracy and 0.886 ROC-AUC, a clear performance lift.

GITHUB ↗

DL IMAGE COLORIZATION

2024

Deep-learning image colorization: autonomous colorization of grayscale images as a/b-chrominance regression in CIE Lab. Autoencoder, U-Net and ResNet50-UNet architectures were built and compared, scored on PSNR / SSIM and validated with pairwise t-tests.

GITHUB ↗

CONTRIBUTED

SELECTED COLLABORATIONS

GIA Creative Studio ↗

Developed website & simulation.

Reconchille Studios ↗

Developed & shipped mobile apps.

Lumos Generative AI ↗

Built custom AI-orchestration pipelines for autonomous video generation.

Koi Academy

Developed website & mobile app (under NDA).

OPEN TO JOB & PROJECT OPPORTUNITIES

Whatever you have in mind — ege.ozcelik@icloud.com

egeozcelik.github.io

github.com/egeozcelik

linkedin.com/in/egeozcelik

medium.com/@egeozcelik

hackerrank.com/profile/ege_ozcelik