RAŞİT TEKİN

AI / Machine Learning Engineer

(Embedded Systems & Electronics Background)

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CAREER SUMMARY

AI-focused Electronics Engineer with hands-on experience in machine learning, computer vision, and cloud-based ML deployment. Built end-to-end pipelines from embedded CAN bus data acquisition to scalable cloud infrastructures using Python, AWS, FastAPI, and ElasticSearch. Developed real-time vehicle recognition and telemetry analytics solutions using YOLO and OpenCV. Strong expertise in data preprocessing, model training, and API-driven deployment of production-ready machine learning models.

EDUCATION

Bachelor of Science in Electrical and Electronics Engineering
Bursa Technical University | 2021 – 2025
GPA: 3.41 / 4.00

WORK EXPERIENCE

AKIA HESS – Long Term Mandatory Intern
Sep 2024 – Feb 2025

- Designed and implemented a real-time CAN bus telemetry pipeline using STM32 microcontrollers programmed in C, enabling IoT-based cloud data acquisition.
- Processed and structured vehicle telemetry datasets using Python and SQL; queried large-scale data in AWS Athena and stored analytical outputs in Amazon S3.
- Built ETL workflows for data cleaning, transformation, and storage to support scalable analytics.
- Developed Grafana dashboards for real-time monitoring and visualization of vehicle performance metrics.

NEW MIND AI – AI Intern
Jul 2024 – Sep 2024

- Developed and trained computer vision models using YOLO, PaddleOCR, and MobileNetV3 for real-time vehicle license plate and make/model recognition.
- Integrated Qdrant vector database and ElasticSearch for structured data storage and similarity-based retrieval.
- Built RESTful APIs using FastAPI for scalable model serving and integrated ML workflows into cloud-based data pipelines.
- Automated inference pipelines to improve real-time prediction performance and deployment efficiency.

UZMAN ELEKTRIK – Electrical and Electronics Engineering Intern
Jun 2024 – Jul 2024

- Designed inverter PCBs using Proteus and conducted component selection, circuit debugging, and hardware validation.
- Performed PCB testing and electrical measurements using oscilloscopes and multimeters to ensure system reliability.
- Contributed to production-stage assembly and technical documentation of corona discharge devices using AutoCAD.
- Supported quality control and functional validation processes to improve manufacturing reliability.

PROJECTS

18W USB-PD Fast Charger Design
Feb 2025 – Jun 2025

- Designed and implemented an 18W USB-PD fast charger using Flyback topology with STM32/ESP32-based embedded control.
- Developed custom PCB layouts in Altium Designer and designed transformer windings for stable power

conversion and thermal performance.
- Implemented PWM control, MOSFET drivers, and synchronous rectification using InnoSwitch3-CP and Cypress CCG3PA controllers to optimize system efficiency.
- Performed hardware validation, EMC/EMI considerations, and functional testing using oscilloscopes and multimeters to ensure reliability and compliance.

Vehicle Recognition System with Raspberry Pi
Feb 2024 – May 2024

- Built an end-to-end vehicle recognition system using Raspberry Pi for real-time license plate detection and vehicle make/model classification.
- Developed computer vision pipelines in Python using OpenCV and YOLO for object detection and image preprocessing.
- Trained and deployed custom machine learning models for classification and integrated inference with IoT-based data acquisition workflows.
- Optimized real-time inference performance for edge deployment, integrating hardware and software components into a scalable AI system.

TECHNICAL SKILLS

Programming : Python, Object-Oriented Programming (OOP), Data Structures & Algorithms, Big-O Analysis
Data Analysis & Visualization: EDA, Data Preprocessing, Data Cleaning, Feature Engineering, Statistical Analysis, Matplotlib, Seaborn, Plotly
Machine Learning: Supervised & Unsupervised Learning, Regression & Classification, Clustering, Ensemble Methods, Model Evaluation, Cross-Validation, Hyperparameter Optimization, Dimensionality Reduction (PCA), Scikit-learn, NumPy, Pandas
Deep Learning: ANN, CNN, RNN, LSTM, Transfer Learning, Time Series Forecasting, TensorFlow, Keras, PyTorch
Computer Vision: OpenCV, YOLOv8/v9/v10, Object Detection, Object Tracking, Image Segmentation, Pose Estimation, OCR, MediaPipe, GPU Training
NLP & LLM Engineering : Transformers, Hugging Face, Fine-Tuning LLMs, Prompt Engineering, RAG, LangChain, LangGraph, Vector Databases, AI Agents (ReAct), OpenAI API Integration, Named Entity Recognition (NER), Text Classification
Data & Analytics: SQL, A/B Testing, Big Data Concepts, Text Mining
Cloud & Data Engineering : AWS (S3, Athena, Lambda, IAM), IAM Role & Policy Management, Serverless Architecture, Cloud-Based Data Pipelines, ETL Workflows, IoT Data Processing
Backend & Deployment : Django, REST Concepts, Authentication, Streamlit, Git, Selenium, Testing

CERTIFICATIONS & ADVANCED TRAINING

AI & Machine Learning Engineering (135+ Hours – Datai Team)
Machine Learning, Deep Learning, Reinforcement Learning, Statistical Analysis, Applied ML Projects.
LLM & Transformer Engineering (31 Hours)
Transformers, Hugging Face, Fine-Tuning LLMs, RAG, LangChain, Vector Stores, AI Agents (ReAct), OpenAI API Integration, Prompt Engineering.
Computer Vision & Object Detection Engineering (40+ Hours)
OpenCV, CNN, YOLOv8/v9/v10, Real-Time Detection, Segmentation, Pose Estimation, OCR, MediaPipe, GPU Optimization.
Data Science & Big Data Analytics (53 Hours)
SQL, Text Mining, EDA, Data Pipelines, Project Workflows.
Backend & Software Engineering (48 Hours)
Django, REST Concepts, Authentication Systems, Testing, Selenium, Version Control (Git).

LANGUAGES

English: Professional Working Proficiency
Arabic: Elementary Proficiency