Muhammed ŞARA

+90 539 714 65 46
muhammedsaraa@gmail.com
Darıca, Kocaeli, Türkiye
muhammedsara.github.io

PERSONAL STATEMENT

A software engineer with 7+ years of experience in computer vision, AI, and embedded systems, and an MSc in Information Systems Engineering from Kocaeli University. Currently pursuing a PhD on AI- and IoT-based disaster response platforms, I have a strong passion for R&D and have applied my skills across domains including autonomous systems, real-time video analytics, and edge computing. I am seeking new challenges where I can contribute innovative solutions and expand my expertise.

WORK EXPERIENCE

VISIGHT Technology
Jul 2020 - Sep 2025

Co-Founder

- Co-founded and scaled a startup developing AI-driven biometric authentication and computer vision solutions.
- Designed and directed system architecture and product strategy for intelligent surveillance and embedded vision systems.
- Led R&D teams and managed end-to-end development of deep learning models for real-time video analytics

GÖKBEY Technology
Nov 2022 - Jun 2023

Technical Lead

- Led the design and development of agricultural spraying UAVs, covering mechanical systems, electronics, embedded software, and ground control.
- Directed R&D efforts in autonomous flight, mapping, and remote operation systems to ensure system reliability and field performance.
- Guided cross-functional teams and contributed hands-on to architecture and subsystem implementation.

AUTONOM Technology
Dec 2019 - Jun 2020

Software Engineer

- Developed computer vision and autonomy software for UAVs.
- Implemented real-time object detection, classification, and localization pipelines.
- Contributed to autonomous flight systems and real-time video analytics.

STM Defence Technologies
Aug 2018 - Sep 2018

Intern - Autonomous Systems / Swarm Intelligence R&D

- Worked on swarm intelligence algorithms, including collision avoidance, velocity matching, and flock centering.
- Modeled quadrotor systems and implemented research papers into practical MATLAB simulations.
- Developed test interfaces and supported real-world drone flight tests.

OTOKAR Automotive and Defence Industry
Jul 2017 - Aug 2017

Intern - Electronics & Embedded Systems

- Developed applications with Qt/C++ and experimented with Yocto-based embedded systems.
- Practiced UART communication using Moxa cards and conducted studies on CAN bus protocols.
- Performed panel tests on Cobra II armored vehicle electronic systems.

EDUCATION

Kocaeli University
Sep 2023 - Present

Ph.D., Information Systems Engineering

- Dissertation: KURTAR: IoT and AI-Based Disaster Response Platform (AFAD & TÜBİTAK 1001 Supported Project).

Kocaeli University
Feb 2021 - Feb 2023

M.Sc., Information Systems Engineering

- Thesis: Prediction of Air Quality from PM10 Concentrations and Meteorological Information Using Cross-Data Analytics.

Kocaeli University
Jul 2015 - Sep 2019

B.Sc., Computer Engineering

- Focus areas: Algorithm Analysis, Design Patterns, Distributed Systems, Embedded Systems.
- Won the Engineering Faculty Achievement Award (AUVSI SUAS Competition).
- Graduation Project: Deep Learning-Based Sign Recognition on Video for Action Development.

STFA Anatolian Technical High School
Sep 2011 - Jun 2015

Information Technologies, Web Design

- High School First (Valedictorian)

SELECT PROJECTS

Ph.D. Dissertation
Nov 2024 - Present

KURTAR: IoT and AI-Based Disaster Response Platform

- Designed an AI- and IoT-based disaster response system with multi-sensor fusion, real-time analytics, and edge/cloud integration.
- AFAD & TÜBİTAK 1001 Supported Project

AUVSI SUAS Competition
Aug 2018 - Aug 2019

KOUSTECH Autonomous Systems

- Built computer vision, machine learning, and deep learning pipelines for autonomous UAV competition tasks.
- Implemented object detection, path planning, and localization modules tailored for mission requirements.
- Deployed algorithms on Jetson Nano to enable edge computing for real-time UAV operations.
- Contributed to the team's participation in the AUVSI SUAS, one of the world's most prestigious UAV competitions, representing KOUSTECH in the USA.
- https://koustech.com/

OpenZeka MARC Competition
Nov 2017 - Aug 2019

Founder & Team Lead

- Founded and led the Kocaeli University team at the OpenZeka MARC competition, achieving 5th place in autonomous driving car challenge
- Built a robotic system on the Jetson TX2 platform using ROS for autonomous navigation.
- Applied Deep Learning models: CNN (TensorFlow) for lane tracking and YOLO for traffic sign detection.
- Implemented sensor fusion with IMU & camera data and Kalman filters for robust localization.
- Designed and tuned a PID controller for stable vehicle control in real-world scenarios.
- GitHub Repository: https://github.com/fourplusone41
- Project Page: https://fourplusone41.github.io/

PUBLICATIONS

- **Journal Paper (SCI-E, 2018)**

  S. Eken, **M. Şara**, Y. Satılmış, M. Karslı, F. Tufan, H. Menhour, A. Sayar.
  A Reproducible Educational Plan to Teach Mini Autonomous Race Car Programming.
  (SCI-E Indexed, 2018).

- **Book Chapter (2018)**

  Y. Satılmış, F. Tufan, **M. Şara**, M. Karslı, S. Eken, A. Sayar.
  CNN-Based Traffic Sign Recognition for Mini Autonomous Vehicles.
  In Advances in Intelligent Systems and Computing, Springer-Verlag Berlin Heidelberg, 2018.

- **National Conference Paper (2018)**

  M. Karslı, Y. Satılmış, **M. Şara**, F. Tufan, S. Eken, A. Sayar.
  Otonom Araç Yönlendirmesi için Uçtan Uca Öğrenme Modeli Tasarımı.
  In IEEE 26th Signal Processing and Communications Applications Conference (SIU 2018).

SKILL

- Programming Languages: Python, C++, C, C#, Java
- Backend & Web Development: Django, Django REST Framework, FastAPI, ASP.NET, RESTful APIs
- Data & Analytics: SQL (MySQL, PostgreSQL), PyData Stack (Pandas, NumPy, Scikit-learn), Spark, Kafka, Hadoop
- Computer Vision & AI: OpenCV, PyTorch, TensorFlow/Keras, YOLO, CNN/R-CNN/FCN, XGBoost, MATLAB
- Robotics & Autonomy: ROS, Sensor Fusion, Path Planning, Gazebo
- Embedded & Edge Computing: NVIDIA Jetson (TX, Xavier, Orin, Nano), Raspberry Pi, STM32, CUDA, TensorRT, Edge AI
- Cloud & DevOps: Git, GitHub/GitLab, Cloud Platforms (Azure), Docker
- Other Technical Skills: Linux, Qt / PyQt5, HTML5 & CSS3, GUI Development
- Languages: Turkish (Native), English (Intermediate)
- Soft Skills: Analytical thinking, Fast learner, Self-motivated, Team-oriented

ACCOMPLISHMENTS

- Secured support for **3 TÜBİTAK projects, 2 KOSGEB projects, and 1 EU project** on AI and biometric identity verification, Jul 2020 – Sep 2025
- Represented Kocaeli University at the world's leading student UAV competition **(AUVSI SUAS, USA)** and achieved a ranked position, Jun 2019
- Won **2nd place at AçıkHack NLP Hackathon** organized by Bilişim Vadisi & Turkey Open Source Platform, Now 2019
- Finalist at **TÜBİTAK 2242 Research Projects Competition** with B.Sc. thesis Deep Learning-Based Sign Recognition on Video, Sep 2019
- Served as **Judge at TEKNOFEST UAV Competition**, UAV category, Sep 2019
- Achieved **2nd place in stage two, 5th overall at OpenZeka MARC Autonomous Driving Competition,** Jan 2018
- Graduated **1st in class (High School Valedictorian)**, STFA Anatolian Technical High School, Web Design Track, Jun 2015
- Won the **Engineering Faculty Achievement Award**, Kocaeli University, Sep 2019