Emre Mutlu

ID: 51250202478 | **Work permit:** German | **Date of birth:** 08/07/1999 |

Place of birth: Istanbul, Türkiye | **Nationality:** Turkish | **Phone number:**

(+49) 17631334814 (Work) | **Email address:** emre.mutlu@sagel-ai.com |

Address: Hubertusstraße 1-5, 52477, Alsdorf, Germany (Home)

WORK EXPERIENCE

SAGEL AI – AACHEN, GERMANY

LEAD SOFTWARE ENGINEER / SOFTWARE ARCHITECT – 01/02/2024 – CURRENT

- Full responsibility for the Full Stack Development (Angular/NodeJs/Postgre SQL) and Architectural Design of Sagel AI Software.
- Entire Development Flow of text based AI Agents (Whatsapp, Email, Telegram, Website)
- Entire Development of audio/telephony based AI Agents and the development of the relevant hardware infrasturcture with Asterisk Servers (Voip, SIP Trunking, ARI (Asterisk Rest Interface), Websocket)
- Server Side Design / Deployment of Software (Server / Client / Microservice)
- Continuous Integration / Continuous Delivery (CI/CD Pipline)
- B2B Sales and Customer Managemet
- Team and Project Management

Front-End: React.js, Angular CLI
Back-End: Node.js, Python
Databases: Postgre SQL, MySQL
AI & Machine Learning: TensorFlow, PyTorch, Scikit-Learn, Computer Vision, Retrieval-Augmented Generation (RAG), Vector Databases, OpenAI API, GDPR Conformity with Azure OpenAI Client, OLLAMA, LLama3
Cloud & DevOps: Docker, Amazon Web Services (AWS), Ngrok, GitHub, Gitea, Docker Compose, NetCup, Portainer, VPS
Telephony & Communication Systems: Asterisk (PBX),VoIP, SIP Trunking, ARI, AudioSocket, Interactive Voice Response(IVR), WebSocket, HTTP/HTTPS
Object Storage: MinIO (S3-compatible), AWS S3 API
Administrative: Linux, Debian Server, pgAdmin, Gitea, EsproCRM, Kimai
Project Management & Business: Agile Project Management, Business-to-Business (B2B)
IDE: Visual Studio Code
Other Programming Languages: JavaScript, TypeScript, Bash(Shell)
Industry Norms: ISO 42010

SCHARCO ELEKTRONIK GMBH. – WUPPERTAL, GERMANY

EMBEDDED SYSTEMS ENGINEER – 01/10/2022 – 01/02/2024

I worked in the intersection of Embedded Software and Cloud Software Deveopment. I wrote the integrations of Embedded Devices with the Company's Cloud Platform. I have integrated new modules to existing embedded systems and also made these new features visible to customers via the web based front end interface.

- Embedded Software Development in C/C++ in ESP IDF.
- Embedded Platforms ESP32 and STM32
- Communication Protocols (ModBus, CAN Bus, USB, Serial, I2C, Ethernet)
- Angular for Front End Development.

Programming Languages & Frameworks: C/C++, Python, Angular, CMake, Bash(Shell)
Hardware Design & Simulation: Altium, LTSpice
Communication Protocols: ModBus, CAN Bus, USB, Serial, I2C, Ethernet, HTTP
DevOps: Github
Other Skills: Systems Networking, Agile Development
IDE: Visual Studio Code + ESP IDF

🏢 SPACE TEAM AACHEN E.V. – AACHEN, GERMANY

Business or Sector Professional, scientific and technical activities

EMBEDDED HARDWARE ENGINEER – 01/01/2022 – 01/02/2024

I have worked as a Hardware Engineer and designed the circuitry of the following systems of the STAHR rocket:

- Parachute Release
- Fuse Detection
- Redundant Power Electronics

Hardware Design & Simulation: KiCAD, LTSpice
Circuit Desing Components: STM32F4, CAN Bus hardware, Buck Converters, LDO, SD, Gyro, Baro, Auto Voltage Select, Reverse Voltage Protection

🏢 FRAUNHOFER IPT

HARDWARE/SOFTWARE DEVELOPER – 01/03/2020 – 01/10/2022

I have worked as a Hardware Developer in the following fields:

- Designed various Embedded Devices for use in Production Lines.
- Designed Enclosures in Solidworks / Autocad Fusion 360
- Data Analysis with Python
- Embedded Programming in C/C++ around SMT32 and ESP32 platforms

Programming Languages & Frameworks: Python, C/C++, PlatformIO, Jupyter Notebook
Hardware Design & Simulation: KiCAD, LTSpice, 2–4 Layer PCBs
Circuit Components: Analog/Digital Circuits, Power (Buck/Boost/LDO/BMS), CAN, OpAmps | IoT (HTTP/MQTT) | ESP32, STM32F4
CAD Software: Autodesk Fusion 360, SolidWorks
PLC Control: Beckhoff EtherCAT

● EDUCATION AND TRAINING

10/10/2024 – CURRENT
M.SC COMPUTER ENGINEERING RWTH Aachen University

Website https://www.rwth-aachen.de/go/id/a/?lidx=1 | **Level in EQF** EQF level 7

Aachen, Germany
B.SC ELECTRICAL ENGINEERING INFORMATION TECHNOLOGIES AND COMPUTER ENGINEERING RWTH Aachen University

Website https://www.rwth-aachen.de/go/id/a/?lidx=1 | **Level in EQF** EQF level 6

● LANGUAGE SKILLS

Mother tongue(s): **TURKISH**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
GERMAN	C1	C1	C1	C1	C1
ENGLISH	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● DRIVING LICENCE

Driving Licence: AM

Driving Licence: B1

Driving Licence: B

PROJECTS

01/09/2025 – 01/10/2025
Ollama-Agent-Kit

Ollama Agent Kit is an open-source Node.js toolkit for building memory-enabled AI agents powered by Ollama. It supports conversation threads, lightweight JSONL memory, and tool calls (e.g., weather, time, reservations), making it easy to integrate LLM agents into your own projects.Write here the description...

Link https://github.com/EmreMutlu99/Ollama-Agent-Kit

System-Logger-Microservice

In a production environment, event logs must be recorded. Some companies do this by saving events to text files, while others have their own logging systems in place. This project is a plugin-based solution that stores event logs in a database and provides a front-end interface.Write here the description...

Link https://github.com/EmreMutlu99/System-Logger-Microservice

01/06/2025 – 10/06/2025
Digital-Image-Fault-Detection-Demo

Surface Defect Detection Demo — Textile Production
This repository contains a **supervised deep-learning demo** for pixel-level defect segmentation in industrial textile images.
A U-Net model, trained on manually labeled data, predicts surface anomalies. The demo includes a Flask web app where you can upload an image and instantly view the predicted defect mask side-by-side with the original.

Link https://github.com/EmreMutlu99/Digital-Image-Fault-Detection

01/04/2025 – 01/05/2025
IOT-Smart-Button-ESP8266

This project was intended to be a low-power, Wi-Fi-connected **open-source IoT button**, designed primarily for use in environments like restaurants, shops, or offices as a simple **"Call Me"** or **"Request Assistance"** button.

Link https://github.com/EmreMutlu99/IOT-Smart-Button-ESP8266

01/01/2022 – CURRENT
GrabCad Open Source

Mechanical design enthusiast with a passion for combining precision engineering and creative problem-solving. My portfolio includes a range of practical and well-crafted CAD models — from antique door handles to calibration tools for 3D printers — designed with both functionality and aesthetics in mind.

Link https://grabcad.com/emre.mutlu-19

PUBLICATIONS

2023
Development and evaluation of an input stage for signal adaptation to perform current and voltage measurements

Institute for Automation of Complex Power Systems | Thesis: Input Stage Dev. for Current/Voltage Measurement | DIN EN 60664-1, DIN EN 61010-1 | Isolation, Safety, Low Voltage Grid

Authors: Ömer Emre Mutlu | **Journal Name**: RWTH Aachen University | **Volume, Issue and Pages**: 86

2024
A Modular Cloud Application Architecture:Self-Hosting with Containerized Microservices Usinga CentralNode and Edge Services

This paper presents an approach to self-hosting cloud applications for small to medium-sized enterprises (SMEs), addressing the problems associated with reliance on external cloud providers and the complexities associated with traditional self-hosting methods.

Authors: Ömer Emre Mutlu | **Publisher**: EMC Ltd.

2025
An Organizational Framework for Distributed Software Development with Remote Workers

This paper presents a secure, scalable framework for managing remote software development using VPS and containerization. It ensures reliability, clear workflows, and efficient collaboration across distributed teams.

Authors: Ömer Emre Mutlu | **Publisher**: EMC Ltd.

RECOMMENDATIONS

Armin Tavakolian Founder @ TavaTech Gmbh.

- We have previously worked together with **Ömer Emre Mutlu** at the Fraunhofer Institute between 2020 - 2022. I was his supervisor, I can vouch for his working ethics and skills.
- He has provided me with consulting services in 2025 and helped us set up a CI/CD pipline for my company, Tavatech Gmbh.

Phone (+49) 15731780022

Michael Weitauer Head of Engineering and Product Management at Scharco Elektronik Gmbh.

- I had the pleasure of working with **Ömer Emre Mutlu** at **Scharco Elektronik GmbH**, where he proved to be a skilled and dedicated engineer. His technical expertise, problem-solving ability, and proactive attitude made him a valuable asset to our team.

Phone (+49) 1791240545

Dr.Hürriyet Yilmaz Founder at Lermonos Vineyards

I had the pleasure of working with Emre Mutlu, who integrated all of our communication channels—such as contact forms, WhatsApp, and email—into the Sagel AI Booking System with AI Agents. Thanks to his expertise, everything works seamlessly, and we are very happy with the results. I highly recommend Emre for his professionalism, technical skills, and commitment to delivering excellent solutions.

Email hurriyet.yilmaz@lermonos.com

SKILLS

JavaScript | SQL | Pytorch | Deeplearning | Tensorflow | computer vision | cloud technologies | AWS | sckit-learn | Python (computer programming) | Jupyter-notebook, | TypeScript | Angular | React | PostgreSQL | Javascript(Nodejs, ExpressJs) | software architecture models | Docker, Docker Compose, Docker Swarm | HTTP, Websocket and REST knowledge | JWT Auth | GIT version control, Linux Command | Linux Servers | Retrieval-Augmented Generation | Vector Databases | VoIP & PBX (Asterisk management, VoIP protocols, ...) | JAVASCRIPT / TYPESCRIPT | Virtual Private server (VPS)