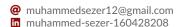
MUHAMMED SEZER

Robotics & AI Enthusiast and Engineer



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METU, Ankara, Turkey SezerSevval



IN THIS CV, COLOR MATTERS!

WEB DEVEL-OPMENT

ROBOTICS

ARTIFICIAL IN-TELLIGENCE

ENTREPRENEURSHIP

ACADEMIC

Also You can Click them to see me in that field. Highly Encouraged!

EXPERIENCE

Co-Founder & Robotics Engineer **Orion Robotics, Robotics Start-up**

September 2021 - Present

Ankara / Turkey

- End-to-End Robotic Development: Led the entrepreneurship initiative for the development of a modular mobile ground vehicle intended for research applications.
- ROS2 Package Design & Driver Implementation: Acted as the primary contributor for the design of ROS2 packages, drivers, and compatibility implementations, showcasing versatility in robotics software development.
- Hardware and Software Testing: Formulated and implemented robust testing protocols for both hardware and software aspects of the project, ensuring consistent performance and reliability.
- Simulation & Development: Developed a comprehensive simulation environment for the mobile robot, proving instrumental in advanced testing and developmental applications.
- Al Applications: Applied Al applications in the creation of the control systems and electronics, achieving improved autonomy and function.
- Entrepreneurship and Sales Experience: Positioned the product for market readiness through comprehensive documentation, driving future development, usage, and troubleshooting, while facilitating effective marketing and sales strategies.
- Team Management: Led a cross-functional team of engineers, fostering a collaborative and efficient environment to reach project
- Problem Solving: Addressed and overcame various technical and logistical challenges throughout the project, demonstrating initiative and resilience.

Swarm Robotics Researcher

Middle East Technical University Robotics Center

September 2021 - Present

- Ankara / Turkey
- Academic Research: Worked under the guidance of Associate Prof. Ali Emre Turgut, engaging in voluntary contribution towards research and development in swarm robotics.
- Embedded Mapping: Focused on embedded mapping using data from range and bearing sensors mounted on robots.
- Data Processing: Involved in extracting key points from point cloud data, contributing to the process of mapping the environment.

MY LIFE PHILOSOPHY

"To play a wrong note is insignificant; to play without passion is inexcusable." - Ludwig van Beethoven

PORTFOLIO

CLICK TO SEE MY DIGITAL PORTFOLIO

ACHIEVEMENTS

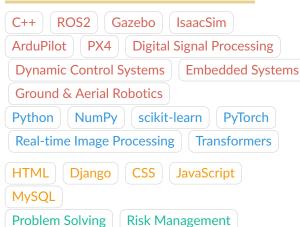
#1 in Entrepreneurship competition Atılım University

#1 and #2 Artificial Intelligence competition around Turkey Teknofest 2022

#2 Young Entrepreneurs Idea Marathon UNICEF 2023

Mansion in University Students Research competition Tubitak 2242

STRENGTHS



Crisis Management Stress Management

Avoiding Complication Decision Making

- Sensor Technology: Carried out extensive work on range and bearing sensor technology.
- **Documentation:** Documented the progress and developments throughout the project on ReadTheDocs Website.
- **Project Management:** Assisted in project management, ensuring the successful and timely completion of tasks.

Research Intern

TED University

- **2**022, Summer
- Ankara / Turkey
- Rehabilitation Robotics Research: Conducted research on rehabilitation robotics for disabled individuals, focusing on the development and optimization of these advanced systems.
- Hardware and Software Development: Contributed to the development of both hardware and software for testing purposes, ensuring the effectiveness and safety of the rehabilitation robotics.
- **User Testing:** Conducted user testing with individuals to gain feedback and further refine the rehabilitation robotic systems.
- Academic Publication: Contributed to a research paper based on the work conducted, which was published at the TOK conference.

Part-Time Engineer

TUBITAK

- **■** September 2021 September 2022 Gebze / Turkey
- Image Processing Algorithms: Contributed to the development of various image processing algorithms, enhancing the capabilities of the department's projects.
- Text Extraction and Data Utilization: Focused on extracting text from given images using OCR Tesseract and various filters from OpenCV, improving data utilization from images.
- Data Evaluation and Processing: Worked within the Veri Kıymetlendirme Bölümü, contributing to key projects and gaining valuable experience in data evaluation and processing.

PROJECTS

Teknofest Artificial Intelligence Competition Self-organized Team

2021 - 2023

- Istanbul / Turkey
- Team Leadership: Led the establishment of a competitive team focused on participating in the Teknofest Artificial Intelligence competition.
- Achievement in Al Competition: Achieved 1st and 2nd place in the competition, setting an all-time best score in the process.
- Data Preparation: Undertook the creation of a comprehensive dataset consisting of 300,000 labels and 25,000 images, serving as the foundation for our competition entry.
- Algorithm Development: Developed an object tracking algorithm, contributing to the advanced functionality of our Al model.
- Implementation of Al Tools: Successfully implemented the SAHI algorithm into the YOLOv5 framework, enhancing our Al model's detection capabilities.
- Tool Development: Built an automatic benchmark tool to continuously evaluate the performance of our AI model and algorithms.

Teaching MS Office Tools Latex

LANGUAGES

Turkish



English



Russian



EDUCATION

B.Sc. in Electrical & Electronics Engineering

Middle East Technical University

2017-2023

REFEREES

Prof. Klaus Werner Schmidt

- @ Electrical Electronics Engineering
- schmidt [at] metu.edu.tr

Middle East Technical University

Prof. İlkay Ulusoy

- @ Head of Electrical Electronics Engineering
- ☑ ilkay [at] metu.edu.tr

Middle East Technical University

Ali Rıza Küçük

- ② Intel Former Regional Consumer Sales Director
- www.kendikocunol.com

- Data Visualization: Automatically generated HTML Website tables to provide a comprehensive overview of the model's and algorithms' performance on the test dataset.
- Public Contribution and Mentorship: Following the competition, took the initiative to publicly share the dataset, providing a valuable resource for future competition entrants and AI enthusiasts.
 Offered free mentorship to nearly 15 different teams, sharing expertise and guidance to aid their progress in the AI field.

Mobile Robotic Vehicle Development Self-managed Project

- **■** September 2019 September 2022 Ankara / Turkey
- End-to-End Robotic Development: Engaged in the conceptualization, design, and production of a mobile robotic vehicle over the course of three years.
- CAD Design & 3D Modeling: Utilized CAD software to design the 3D model of the robot, ensuring optimal design for functionality and ease of production.
- Production Skills: Employed 3D printing technologies and woodworking skills to physically produce the robot based on the CAD designs.
- Custom Circuit Board Design: Contributed to the design and manufacturing of a custom circuit board to control and operate the robotic vehicle.
- Control System Implementation: Leveraged expertise in electronics and embedded systems for the implementation of the robot's control system.
- ROS2 Development: Developed ROS2 packages and defined custom message types to facilitate intercommunication between different components of the system.
- Autonomous Navigation: Integrated Navigation2 (Nav2) into the robotic vehicle, allowing for sophisticated autonomous navigation capabilities.
- Performance Optimization: Tested and optimized the robotic vehicle's performance in various conditions, ensuring its robustness and reliability.
- Remote Control & Monitoring: Authored a dedicated ROS2 package for a desktop PC to remotely control and monitor the robotic vehicle.
- Comprehensive Documentation: Documented all stages of the project, from design to production, facilitating potential reproductions and further improvements.

PUBLICATIONS

Journal Articles

- E. Muslu, M. Sezer, A. Okasha, A. E. Turgut, and K. B. Arıkan, "Effect of adaptive assisted exoskeleton control system on motor learning skills," Fırat Üniversitesi Uzay ve Savunma Teknolojileri Dergisi, 2022.
- Ş. Dikkaya and M. Sezer, "Remote sensing in traffic dataset," *GitHub repository*, 2021.
