Abdullah ERZIN

Istanbul, TR | abdullaherzin80+resume@gmail.com | Github | LinkedIn | Medium | BentoMe

EDUCATION

Marmara University   Istanbul, TR
Mechatronics Engineering   *Graduation Date: Mar 2021*

WORK EXPERIENCE

Robsys Robotic Systems   **Istanbul, TR**
Software Engineer   *Mar 2024 - Present*

- Architected and single-handedly implemented an autonomous navigation algorithm from scratch, incorporating custom SLAM mapping, pathfinding logic, and obstacle avoidance systems that enabled the cleaning robot to operate independently without pre-existing frameworks.
- Engineered an end-to-end AI solution utilizing Jetson hardware and multi-sensor fusion (stereo cameras, gyroscopes, and ultrasonic sensors), designing and training custom deep learning models for comprehensive environmental perception. Implemented stereo vision algorithms for depth mapping and 3D positioning, while integrating gyroscopic data for precise orientation tracking and ultrasonic measurements for reliable obstacle detection. Developed low-level firmware for sensor synchronization and direct robot control through motherboard communication protocols, achieving robust autonomous navigation in dynamic environments.
- Collaborated with cross-functional teams to develop a robust communication system that streams live data and camera feeds to a mobile application, enhancing user experience by providing real-time monitoring and remote control capabilities.

Bomensoft (Lay-off due to economic bottleneck)   **London (Remote)**
AI Developer   *Jan 2024 - Feb 2024*

- Collaborated with team members to optimize AI models and add new features to backend significantly enhancing efficiency and performance
- Revamped website log structure using JavaScript, HTML and Python, enhancing data connectivity and streamlining access for improved analysis
- Expanded website functionality by developing new pages and implementing additional features to enhance the backend of the company's project

DGR Project   **Istanbul, TR**
Computer Vision Engineer   *May 2023 - Dec 2023*

- Led end-to-end development of algorithms and AI models demonstrating a deep understanding of project intricacies
- Developed a highly secure face recognition algorithm achieving 98% accuracy and reducing false positives by 30%, optimizing memory usage to just 4kb with Jetson Nano
- Optimized processing time through C++ function optimization, enhancing efficiency
- Aligned package versions with project dependencies for compatibility with Jetson, while customizing AI models for the platform
- Spearheaded the development of an innovative live streaming project, aiming to reduce processing time to under 30ms, managing both software and computer vision model development

ZGN Autonomous & Robotics   **Istanbul, TR**
Autonomous Vehicle Development Engineer   *Dec 2022 - May 2023*

- Contributed to autonomous driving algorithm development projects
- Optimized pathfinding algorithm for autonomous vehicles, resulting in a 30% reduction in processing time and increased overall efficiency
- Designed and implemented an algorithm enabling robors to map areas directly using construction plans' blueprint

Gensys Automation & Machine Vision   **Kocaeli,TR**
Machine Vision Engineer   *Dec 2021 - Dec 2022*

- Acquired proficiency in C#, SQL, and Halcon, utilizing these skills to develop desktop applications and machine vision programs
- Integrated Halcon codes into C# desktop applications and established connections with MSSQL databases for seamless functionality
- Conducted on-site setup of the project in the early stages of my career and developed two projects for Tubitak(The Scientific and Technological Research Council of Türkiye)

Mavis Machine Vision   **Kocaeli, TR**

Intern   *Jul 2020 - Mar 2021*

- Gained hands-on experience in Halcon for computer vision, SQL for database management, and C# for software development, enhancing skills in image processing, data querying, and application building.

PROJECT EXPERIENCE

Gensys Automation & Machine Vision (TUBITAK)   **Kocaeli, TR**

Non-Destructive Testing Program   *Jan 2022 - May 2022*

- Spearheaded a research project focused on non-destructive testing (NDT) utilizing halogen lamps
- Conducted mathematical research to develop equations for the project
- Designed and implemented a setup with halogen lamps and thermal cameras for experimental purposes
- Developed a desktop application to succesfully demonstrate the detection of defects in materials using thermal cameras and heat effects

Gensys Automation & Machine Vision (TUBITAK)   **Kocaeli, TR**

Auto Image Cropping Program   *Feb 2022 - Mar 2022*

- Developed an auto image cropping program to preprocess images for feeding into machine learning models

DGR Project   **Istanbul, TR**

High Secured Face Recognition System   *May 2023 - Jul 2023*

- Independently developed and implemented an algorithm aimed at enhancing efficiency, resulting in the creation of a high-security face recognition system achieving 98% accuracy
- Solely managed the entire development lifecycle of the project, from conceptualizaion to deployment, ensuring robust security measures and optimal performance
- Engineered innovative solutions to reduce false positives by 30% and optimize memory usage to a mere 4kb for personal data storage, demonstrating strong problem-solving skills and technical acumen

DGR Project   **Istanbul, TR**

Live Streaming Poject Leadership   *Jul 2023 - Oct 2023*

- Led to end-to-end development of an innovative live streaming project with the primary goal of recuding the entire process time to under 30ms for seamless live stream on YouTube.
- Implemented advanced algorithms and software engineering methodologies in independently to optimize the live streaming process for minimal latency and superior performance

Robsys Robotic Systems   **Istanbul, TR**

Software Engineer   *Mar 2024 - Present*

- Utilized stereo cameras, ultrasonic sensors, and encoders to build a comprehensive autonomous navigation system for the cleaning robot, ensuring accurate environmental sensing and movement.
- Collaborated with an embedded engineer to design and implement a custom communication protocol via UART for precise control and data exchange between the robot's motherboard and its subsystems.
- Integrated real-time data and camera streaming to a mobile app, enabling users to monitor and control the robot remotely, including safety operations through direct interaction with the app.
- Developed a dynamic mapping and navigation algorithm from scratch using NumPy arrays, allowing for autonomous driving and real-time updates of the robot's environment.
- Developed a custom AI model integrated into the autonomous driving algorithm, enhancing the robot's ability to navigate and make real-time decisions based on environmental data

SKILLS & INTERESTS

Skills: Python, Halcon, JavaScript, C#, C++, HTML, CSS, SQL, Tensorflow, PyTorch, OpenCV, Numpy, Git

Interests: Motorcycles, Scuba Diving (1* Diver)

REFERENCES

Yasin CICEK : Robsys Robotic Systems : Embedded Software Engineer