

Esra ALBAYRAK ÖZDEŞ

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Ankara, Türkiye

PROFILE

As a determined and self-disciplined person, I am always seeking opportunities to enhance my skills and knowledge. I am currently working as a Software Developer, where I continue to expand my expertise in programming, problem-solving, and software design. I enjoy applying both my theoretical and practical knowledge to real-world projects, and I am passionate about contributing to innovative solutions that make a difference. Having spent a few years focusing on personal development and family life, I am now ready to embrace new challenges and grow further in my professional journey. I am open to exploring diverse opportunities that align with my skills and aspirations.

EDUCATION

- Başkent University** Ankara
Master's Degree in Computer Engineering Sept. 2024 - Present
- Ege University** Izmir
Department of Mathematics - Mathematics Majored in Computer Science Sept. 2010- June. 2015

EXPERIENCE

- Geontek Teknoloji Üretim A.Ş.** Ankara
Software Developer Nov 2023 - Aug 2025
 - Developed four distinct CNC Controller applications using Python, C++, JavaScript and C#.
 - Developed a custom handheld CNC controller using Arduino IDE, featuring real-time G-code transmission over serial communication, rotary encoder input for precise axis control, and LCD feedback via I2C interface.
 - Designed and implemented a CNC Controller App with 3D image processing on RaspberryPi using OpenMVG and OpenCV libraries.
 - Gained experience in embedded software development, focusing on serial port communication and code optimization to ensure high performance and reliability of applications.
 - Developed object-oriented code to enhance modularity, reusability, and maintainability of software components.
 - Led the initiative to adopt Git for code management, improving collaboration and version control across teams.
 - Utilized Linux operating system and demonstrated strong proficiency in shell scripting for effective system management and development tasks.
- TURK AI Yapay Zeka Bilişim ve Yazılım Sistemleri A.Ş.** Ankara
Trainee Oct 2022 - April 2023
 - Within the scope of Işkur IEP, the following trainings were completed under the Turk AI company's guidance. Basic and intermediate level knowledge trainings were obtained. The main goal of the training program is exploring the field and improving coding skills. Following abilities gained and improved.
 - OOP and Data Structures skills improved, for writing efficient, maintainable, and scalable code.
 - NumPy and Pandas, for creating dataframes and preprocessing.
 - Matplotlib and Seaborn, for data visualization.
 - PyTorch, SciKit-Learn and TensorFlow, for creating models, making predictions, calculating loss and accuracy values etc.
 - For understanding Natural Language Processing, focused on Sentiment Analysis and Speech Recognition models.
 - For understanding Computer Vision, focused on object recognition and detection, image processing.
 - SQL, for creating queries on python both with SQLite and PgAdmin interface.
 - Docker, basic use and understanding.
 - Selenium and BeautifulSoup, for web scraping.
 - Flask, for web development. Mini applications built with using SQLAlchemy and FastAPI. Postman and Insomnia applications used.
- Six Flags Entertainment Corporation** New York
Ride Operator June 2013- Sept 2013
 - Went to the USA with Work and Travel program to improve English communication skills.
 - Assigned tasks were completed according to the work plan.

PROJECTS

- **Hybrid Quantum-Classical Sarcasm Detection (QNLP):** Designed and implemented a quantum-enhanced NLP model for sarcasm detection using PennyLane and Qiskit. The hybrid approach combines classical BERT-based embeddings with quantum circuits to improve contextual understanding in text classification.
- **Nurikabe Solver:** A puzzle-solving application developed to solve Nurikabe puzzles using Minimum Remaining Values (MRV), Backtracking, and Forward Checking algorithms. The project demonstrates advanced problem-solving skills, constraint satisfaction techniques, and algorithmic optimization.
- **Web Scraping with Selenium :** Web scraping performed on two different websites, then data added to MongoDB collections. Price comparison and daily updates made.
- **Customer Segmentation :** According to RFM score, customer segmentation made.
- **Binary Image Classification :** With using open source python library, PyTorch, Cat-Dog Classification model created and trained.
- **Data Visualization :** With using well-known CIFAR10 dataset model created and some predictions made on this dataset.
- **Sentiment Analysis :** With using amazon review dataset, Sentiment analysis has made for predict negative and positive views.
- **Flask Application:** With using Flask and SQLAlchemy, CRUD operations performed on a table.

PROGRAMMING SKILLS

- **Languages:** Python, SQL, C++, C# , HTML, CSS, JavaScript, R
- **Libraries / Frameworks:** PyTorch, SciKit-Learn, NumPy, Matplotlib, Seaborn, TensorFlow, OpenCV, PennyLane, Qiskit, Selenium, Flask, FastAPI, Electron.js, Bootstrap, Playwright, PySerial, Threading, Kivy, OpenMVG, Glade, OpenGL, Vue.js

OPERATING SYSTEMS

- Linux
- Windows
- Raspbian

CERTIFICATES

- **Issuing organization :** Miuul **Name :** Data Scientist Path
The Path includes following modules : Introduction to Data Science and Artificial Intelligence, Python Programming for Data Science, CRM Analytics, Recommendation Systems, Measurement Problems, Feature Engineering, Machine Learning, Querying MS SQL, Production Level Data Science
- **Issuing organization :** Patika **Name :** Timus Product Management Bootcamp
- **Issuing organization :** Global AI Hub **Name :** Akbank Data Analysis Bootcamp

LANGUAGES

- **English:** Professional working proficiency
- **Bosnian:** Elementary proficiency

REFERENCES

- **Şahin KORKMAZ:** Head of Image Processing Systems Division at Gendarmerie General Command
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- **Barış ÜNVER:** CEO & Founder of Turk AI
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- **Sabiha HIZAL BAL:** Senior QA Engineer at Getir
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