Burak Erdilli

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WORK EXPERIENCE

General Directorate of Agricultural Research and Policies (TAGEM)

Machine Learning Engineer - TÜBİTAK Project: OtolitAI   Oct 2025 - Present

- Developing AI models to estimate fish age from otolith imagery using deep learning and computer vision techniques.
- Collaborating with interdisciplinary teams of marine biologists and AI researchers under TÜBİTAK funding.
- Conducting data preprocessing, augmentation, and model optimization for robust age prediction accuracy.
- Integrating results into a scalable system for fisheries research and policy applications.

Independent Contract / Multiple Clients

Freelance AI & Data Engineer   Aug 2024 - Jun 2025

- Built and maintained a price optimization tool for e-commerce clients, including order/stock projections, dynamic pricing, discount generation, and actionable insights.
- Performed data analysis, reporting, and monitoring to optimize sales and conversions.
- Managed client communications, meetings, and technical support for platform usage.
- Hosted automation workflows, ETL pipelines, and microservices on a PVE server with storage management, automated backups, and full infrastructure support.

P.I. Works

R&D Intern   Jun 2023 - Oct 2023

- Participated in team meetings to discuss network optimization strategies.
- Collaborated with team leads to troubleshoot network issues and implement solutions.
- Supported configuration tasks for Network Function Virtualization (NFV) and Network Service Orchestration (NSO) systems.
- Performed ETL operations on raw data, transforming and loading it into databases, and generating pipeline outputs in XML files.
- Conducted tests and evaluations for virtualized network functions (VNFs) using Linux-based systems.
- Utilized SQL for querying and managing databases related to network configurations and performance data.

Neurosurgery Department, Hacettepe University

Research Intern - Brain Tractography   Nov 2021 - Sep 2022

- Actively participating in organizational planning.
- Collaborating with the team during the interpretation process.
- Reviewing literature on brain tractography studies under the supervision of Dr. Şahin Hanalioğlu, M.D.
- Processing Human Connectome Project data using DSI Studio, a tool for analyzing brain imaging data and mapping neural pathways and brain connectivity.
- Analyzing outputs using NumPy, pandas, iGraph, and Nilearn.

Article: https://burakerdilli.github.io/assets/pdf/USK2022.pdf

EDUCATION

Yıldız Technical University

BSc in Computer Engineering - 3.01   2019 - 2024

Thesis: Detection of Cell Types in Full Slice Ocular Images Using YOLOV8
Bahçeşehir Highschool for Science and Technology

High School Diploma - 96.80   2014 - 2019

DIGITAL SKILLS

Programming Languages
- Python / C / C# / SQL / Assembly(80X86) / Java / Matlab / HTML / CSS

Frameworks & Tools
- FastAPI / Docker / PyTorch / Git / Flask RESTful / Django / NumPy / pandas

Algorithms & Concepts
- Algorithms & Data Structures / Object-Oriented Programming / Applied Machine Learning Concepts

Creativity/Project Tools
- Gitlab / VirtualBox / Proxmox / Jira / DSI Studio / LAteX / Protheus / Adobe Photoshop & Lightroom / Microsoft Office

PROJECTS

AI-Driven Financial Intelligence Platform (Ongoing)   2025 - Present
- Built a **real-time finance RSS and market data aggregator** with AI-assisted predictive models for buy/sell pricing and trend forecasting.
- Implemented **n8n workflow automation** for data ingestion, alerting, and analytics pipeline orchestration.
- Generated **dynamic reports and dashboards** summarizing market trends, volatility, and actionable insights.
- Hosted the platform on a **PVE server** with Dockerized services, automated backups, and client-accessible workflows.
- Developed **technical analysis modules, ETL pipelines, and documentation** for scalable, reliable, and client-ready operations.

Detection of Cell Types in Full Slice Ocular Images Using YOLOV8 - Final Thesis ⬀   2024
- Trained a YOLOV8 model, based on PyTorch, using image and annotation data across 18 different cell classes.
- Integrated the tested model into a mobile application using React.

Thesis Repository: https://github.com/BurakErdilli/yolov8

Ubuntu Server Deployment and Automation for e-commerce ⬀   2024
- Automated Trendyol platform management with Python scripts for inventory and dynamic pricing.
- Boosted profits by 48.5%, views by 82.5%, and product variety by 24% through task automation.
- Implemented **Nextcloud, Docker containers, cron jobs, and system monitoring** for optimized server performance.

Project Repository: https://github.com/BurakErdilli/ecommerce-server-automation

Vehicle Control Using Eye-Gaze Tracking ⬀   2023
- Utilized python-dlib for face and eye detection.
- Employed **OpenCV** for image processing.
- Controlled vehicle direction based on the user's gaze, with responsive outputs including:Up, Down,Left, Right Blink, Double blink, Blink for a specified number of seconds

Project Repository: https://github.com/BurakErdilli/eye_gaze_tracking

The Embedded System of Raspberry Pi 2 That Translates Human Blink Patterns Into Morse Code Responses ⬀ 2022
- Developed an embedded system that produces letters written in Morse code by detecting the length of a person's eye blinks in front of a webcam and generating output in the form of lines or dots.
- Includes commands for confirming or deleting the letter or word.
- Utilized **OpenCV**, **dlib**, and **NumPy** in the development.

Project Repository: https://github.com/BurakErdilli/embedded_blink

Discord alike messaging application "chatz" | Group Project on System Programming ⬀   2022
- Developed the backend of a messaging application using Flask, including security features.
- Implemented additional UX features to enhance user experience.

Project Repository: https://github.com/BurakErdilli/chatz

Local Mining Information System | Independent Group Project on System Analysis ⬀   2021
- Developed a network system with a mobile app for tracking members' mining hardware information.
- Enabled real-time monitoring and management of mining hardware across the network.

Water Treatment Using the Plant "Moringa Oleifera" | Chemistry Project Applied to TUBITAK ⬀   2017
- Conducted research using Moringa Oleifera (Miracle Tree) as a nutrient in the seed treatment method.
- Leveraged Moringa Oleifera Cationic Protein (MOCP) to kill microbiological organisms in water and observed that particles precipitate to the bottom.

Keywords: Moringa Oleifera, Treatment, Activated Carbon, Ion Exchange Resin, Moringa Oleifera Cationic Protein (MOCP)

Low Cost Renewable Packaging Model | Presented to FIRST Lego League Jury   2016
- Received the **Best Project Award** at the FIRST Lego League Turkey Championship Finals.
- Awarded the Environmental Award from Koroplast Company in collaboration with **Corozo Group**.
- Won the First Place Gracious Professionalism Award at the **Asia Pacific Open Championship 2016**, held at **Macquarie University**.

CERTIFICATE

ETS | TOEFL IBT ↗
Test Appointment Number: 6676811215154324
Score:97 Reading:25 Listening:26 Speaking:25 Writing:21
Google Data Analytics | Google ↗

Machine Learning | Stanford University ↗

Generative AI for Data Engineers | IBM ↗

LANGUAGE

English Advanced
LISTENING C1 READING C2 WRITING C1 SPOKEN PRODUCTION C1 SPOKEN INTERACTION C1
German Intermediate
LISTENING A2 READING B1 WRITING A2 SPOKEN PRODUCTION A2 SPOKEN INTERACTION A2

RECOMMENDATIONS

Name: Ayturk Zafer
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