OYKU SAHIN

M.Sc. Computer Science

+90 537 462 70 55 • oykusahin08@gmail.com • linkedin.com/in/oykusahin/ • tinyurl.com/oykusahin • github.com/oykusahin

Experience

Orion Innovation — Istanbul, Turkey

Machine Learning Engineer — 08/2024 - Present

- Developed AI-powered tools using **LLMs** to process and analyze content in PDF, Word, PPTX, Markdown (MD), and TXT formats, enhancing workflows through **text summarization, question generation, and paraphrasing**.
- Applied **prompt engineering** to optimize data processing pipelines, with a focus on generating questions from given inputs using advanced prompt engineering methods.

EnerjiSA — Ankara, Turkey

AI Innovation Engineer — 10/2023 - 08/2024

- Led research and development efforts for AI-based projects, driving innovations to optimize operations in the electric distribution sector.
- Managed cross-functional collaboration with scientists, start-ups, and infrastructure experts to design and deliver data-driven solutions addressing industry challenges.
- Developed a **Retrieval-Augmented Generation (RAG)** architecture and integrated LLMs to create a chatbot that provides accurate answers aligned with electric distribution regulations.

Chooch AI — California, United States

Machine Learning Engineer — 04/2022 - 08/2023

- Enhanced person re-identification (ReID) performance by 60% using the TorchReID model, contributing to improved operational capabilities.
- Led **innovation-driven R&D initiatives** by experimenting with emerging technologies and assessing their potential impact.
- Reviewed and reported monthly on state-of-the-art research ensuring continuous alignment with the latest developments in the field.
- Implemented real-time person and vehicle ReID across four security cameras using RTSP streams as part of an **airport surveillance** project to increase **security and monitor passenger flow, suspicious activities, and restricted areas.**
- Designed and maintained an **Innovation Funnel platform** to streamline and prioritize projects for the ML and MLOps team.
- Increased model efficiency by 30% on average by optimizing object detection preprocessing with DALI.
- Contributed to the development of an Inference Engine **to optimize the performance and deployment of deep learning models** in production environments.

Multi-Robot Intelligence and Perception Lab (MIPL) — Istanbul, Turkey

Machine Learning Research Assistant — 01/2020 - 03/2022

- Enhanced YOLOv3 accuracy by 10% for detecting small objects in drone-captured datasets, earning the **Best Student Paper Award.**
- Conducted research on 3D MRI and CT images for **brain tumor segmentation and COVID-19 detection**, with findings published.
- Explored NLP techniques for computer vision applications, focusing on LSTMs and transformers, resulting in published work.
- Participated in computer vision competitions organized by the **Defense Industry Agency of Turkey,** applying instance segmentation techniques for defense-related tasks.
- Worked with **unmanned aerial vehicle (UAV) images,** performing object detection, object tracking, remote sensing, and instance segmentation using tools like Python, PyTorch, TensorFlow, and MATLAB.
- Utilized CVAT to manage data annotation for computer vision projects, ensuring high-quality labeled datasets.
- Developed and maintained code repositories on the lab's GitHub, ensuring efficient version control and collaborative development.
- Assisted seven new group members by creating training materials, such as coding exercises, to support their onboarding.

Special Tribunal for Lebanon (United Nations) — The Hague, Netherlands

Information Technologies Department Intern — 07/2019 - 10/2019

- Gained experience working within a **politically sensitive, international environment**, collaborating with personnel from **diverse cultural** backgrounds.
- Supported the organization's IT infrastructure during the Windows 10 migration by preparing asset reports and managing data with SQL for seamless operations.
- Maintained and improved existing Python-based programs, ensuring system continuity and performance.

Skills

Programming & Development Tools: Python · Java · SQL · Flask · React · Git · Docker · Agile / SCRUM · VBA

Machine Learning & Data Science Frameworks: PyTorch · TensorFlow · Scikit-Learn · OpenCV · Triton Server · RAG · Numpy · Pandas

Cloud, Data Management & Infrastructure: AWS · Azure · S3

Education

Bilkent University

M.Sc. of Computer Science | GPA: **3.00** / 4.00 — 01/2020 - 01/2023

- Advisor: Prof. Ibrahim Korpeoglu
- *Thesis: Improving the Performance of YOLO-Based Detection Algorithms for Small Object Detection in UAV-Taken Images*

TED University

B.Sc. of Computer Science | GPA: **3.45** / 4.00 — 09/2015 - 06/2019

- Advisor: Asst. Prof. Tayfun Kucukyilmaz
- *Graduation Project:* Prediction and visualization of spreading pattern of a tokenized text content in an influence network by retrieving text based data from Twitter

Certification

AWS AI Practitioner — Amazon Web Services

Languages

English Native

German Intermediate

French Beginner

Publications

IEEE Conference on Signal Processing and Communications Applications (SIU), 2022. — 2022

YOLODrone+: Improved YOLO Architecture for Object Detection in UAV Images

O. Sahin, S. Ozer

World Scientific, Computational Intelligence and Image Processing in Medical Applications, 33-48 — 2022

Segmentation of COVID-19 Infected Lung Area in CT Scans with Deep Algorithms

O. Sahin, F.E. Doğanay, S. Ozer, C.H. Chen

World Scientific, Computational Intelligence and Image Processing in Medical Applications, 119-133 — 2022

Deep Learning based 3D Brain Tumor Segmentation with Multi spectral MRI

F.E. Doğanay, O. Sahin, S. Ozer, C.H. Chen

44th IEEE International Conference on Telecommunications and Signal Processing (TSP) — 2021

YOLODrone: Improved YOLO Architecture for Object Detection in Drone Images

O. Sahin, S. Ozer

SPONSORED PROJECTS AND SCHOLARSHIPS

100% Scholarship (2020)
Full scholarship for M.Sc. Degree of Computer Science Department in Bilkent University

Undergraduate Research Fund (2019)
Graduation project of my Bachelor's degree was sponsored by this fund.

75% Scholarship (2016)
For being second-highest-ranked-GPA in Engineering Faculty.

Key Achievements

Give "Introduction to Artificial Intelligence" course for SistersLab, an NGO that empowers women in STEM. (September 2024)

I help develop technology policies for the "Chamber of Computer Engineers of Turkey" by analyzing government reports. (2023)

Results for COVID-19 Lung Segmentation are printed in the cover of "Computational Intelligence and Image Processing in Medical Applications" book (May 2022)

Won the "Best Student Paper Award" in IEEE TSP 2021 Conference. (September 2021)

Second-highest-ranked graduate of class of 2019 of the Computer Engineering Department (July 2019)

Elected as Executive Board Member of Student Council (September 2017)

REFERENCES

Available upon request.