YASEMIN OZKUT

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EDUCATION_

The Ohio State University

CGPA: - /4.00 • Aug 2024 - Expected May 2026 • Columbus, OH, USA M.Sc in Electrical and Computer and Engineering (First Year)

Sabancı University

CGPA: 3.39/4.00 • Sep 2019 - Feb 2024 • Istanbul, Turkey

- B.S in Computer Science and Engineering, Faculty of Engineering and Natural Sciences (Graduated) •
- Minor in Business Analytics, School of Management •

SKILLS _

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Programming Languages: Python, C++, C, C#

Frameworks & Libraries: PyTorch, CUDA, YOLO, Keras-OCR, OpenCV, React.js, Flutter, Node.js, Express.js, MongoDB, SQL Tools: Git, SLURM, Command Line (Linux), LaTeX, Gephi, Postman, Unity, Figma

Techniques: Machine Learning, Deep Learning, Distributed Training, Multi-modal Learning, Vision-Language Models (VLM) Artificial Intelligence, Object Detection, Segmentation, Image Processing, Computer Vision, Text Recognition, Network Analysis, Data Visualization, Object Oriented Programming

RESEARCH & PROFESSIONAL EXPERIENCE.

The Ohio State University, Photogrammetric Computer Vision Lab Graduate Research Assistant, under the supervision of Dr. Alper Yilmaz Aug 2024 – Present • Columbus, OH, USA

- Conducting research on multi-modal learning for chest X-ray interpretation with report generation downstream task.
- Developing a vision-language model (VLM) that leverages X-ray images and corresponding medical reports.
- Fine-tuning large models (e.g., GPT, LLaMA 3.2, ViT) using a curated chest X-ray dataset for cross-modal • understanding.
- Cleaned and preprocessed the MIMIC-CXR dataset, reducing it from 377,110 images, and 227,835 studies to 100,618 • images, and 50,309 studies, ensuring each study includes frontal and lateral images, with findings and impressions.
- Designed two different custom dataset classes to evaluate performance with single-view and multi-view (frontal/lateral) X-ray configurations.
- Implemented masked image patching pipeline to improve representation learning from X-ray inputs.
- Optimized training on multi-GPU clusters using Hugging Face Accelerate, CUDA, and SLURM for efficient HPC job ٠ scheduling.
- Currently building a PyTorch-based transformer architecture to jointly learn from image and text modalities.

DAI-Labor

Jul 2023 – Sep 2023 • Berlin, Germany (On-Site) Artificial Intelligence Researcher Intern (Supermarket Product Recognition Using Computer Vision)

- Conducted a comprehensive literature review to identify the best product recognition model.
- Collected, annotated, and augmented product images in Freiburg Groceries Dataset using Roboflow.
- Developed a live web camera object detection model with Python and YOLOv8, achieving %80 accuracy in identifying ٠ custom German supermarket products, with plans to guide users to the correct storage location.
- Integrated an OCR algorithm (Keras-OCR) with word slicing for German-labeled products. •
- Evaluated model performance using confusion matrices, F1 scores, and loss graphs for comparison. •

Further Network

Software Developer Intern

- Improved Furtherpass, a travel planning app for pandemic conditions, helping users find testing labs and services.
- Developed front-end features using React Native, including a password show-hide toggle, and added navigation for email confirmation of registered but inactive users.

Jul – Aug 2022 • Istanbul, Turkey (Online)

PROJECTS

Implementing Serious Game for Children with Cerebral Palsy

- Developed a serious game in Unity using C# for balance physiotherapy sessions in children with Cerebral Palsy.
- Collected live data from Wii Balance Board for each game session and stored it into MongoDB.
- Generated visual reports from the processed data using Python and Flask.

Artificial Intelligence Course Projects, Sabancı University

- Implemented Uniform Cost Search and A* Search for Color-Maze Puzzle, a single-agent grid game and compared their CPU time, memory consumption, and search space.
- Modeled the Slant puzzle as a Constraint Satisfaction Problem (CSP) and evaluated 15 instances across 3 difficulty levels, in terms of constraints and number of backtracks.
- Designed a Loopless Slanted two-player zero-sum game, with alpha-beta pruning for game tree search.

Spotify Music Artist Success Collaboration Network, Sabancı University

- Manually extracted and preprocessed artist, collaboration, and song data from Spotify and Kaggle for data collection.
- Built a collaboration network in Python using Networkx with 8624 artists (nodes) and 13318 connections (edges) incorporating genre, popularity, followers, and centrality metrics.
- Applied clustering and centrality algorithms to identify key influencers and measure success within the network.
- Visualized the network with Gephi and analyzed the network using Python visualization tools.

Agile Full Stack Software Development Project, Sabanci University

- Implemented a full stack web application including statistics, data for visualization, better referee assignments, and better GUI design for Turkish Football Federation using MongoDB, Express.JS, React.JS, Node.JS (MERN Stack).
- Gained hands-on experience with version control, scrum meetings, sprint management, deployment, and full stack web development from scratch, while improving teamwork skills.
- Conducted automated testing with Selenium, API documentation with Swagger, and web scraping.

Twitter Bot User and Political Tweet Detection Machine Learning Project, Sabanci University Oct 2022 - Jan 2023

- Enhanced the accuracy of the baseline ML model for detecting Twitter bot users and political tweets using Python and various models, including Decision Tree, Random Forest, kNN, Naïve Bayes, XGB, AdaBoost, and Gradient Boost.
- Optimized hyperparameters for improved predictions.

Mobile Programming Course Social Media App Project, Sabancı University

- Implemented a well-designed social media application with Flutter and link it to Firebase backend service.
- Gained knowledge in interface design, validation checks, Firebase Analytics, Crashlytics, core features, and authentication, while enhancing teamwork skills.

Introduction to Business Analytics Course Case Studies, Sabanci University

- Performed data visualization, exploratory data analysis, and machine learning with R language for case studies.
- Wrote case reports that include the business problem, data interpretations, and analysis of machine learning models.

Data Science Course Term Project, Sabancı University

- Conducted exploratory data analysis (EDA), hypothesis testing, and applied ML models for data science.
- Collaborated in a team to build predictive models using Python, applying techniques such as linear regression, random forest, kNN for predicting movie Meta scores.

MEMBERSHIPS & VOLUNTEER WORK _____

Hip Hop Dance – Intermediate Dancer, Performer	2015 - Present
Beginner Ukulele Player	2022 – Present
kAI Sabancı – Nvidia Artificial Intelligence Student Club – Project Member	2023 – 2024
Tomorrow is Possible with You Project – Mentored students in using AI	Oct 2023
SuDance (Dance club), Sabancı University – Board Member (1 year), Active Member	2019 - 2023
ITU ACM algoComp Competitive Programming – Contestant	Jan 2023
Peak Games Unithon Event – Contestant	Oct 2022
Civic Involvement Project in Sabancı University – Tutored 4 th grade students about social awareness	Feb - Jun 2020

Feb 2022 - Jun 2022 or case studies.

Feb 2022 - Jun 2022

Nov 2021 - Dec 2021

Feb 2023 - June 2023

Oct 2022 - Jan 2023

Feb 2023 – Feb 2024 • Istanbul, Turkey

Feb 2023 - June 2023