MUSTAFA DOGAN

Ankara, Turkey   ✉ dogan_mustafa@hacettepe.edu.tr   Google Scholar   🏠 mustafaadogan.github.io

in dogan-mustafa   ○ mustafaadogan

EDUCATION

Hacettepe University   2021-2024
Master's in Science in Computer Engineering | GPA: 3.64/4.0   *Ankara, Turkey*
Graduate Thesis: *Evaluating Zero-Shot Learning Capabilities of Vision-Language Models*
Advisors: Erkut Erdem, Aykut Erdem

Konya Food and Agriculture University (KFAU)   2016-2021
Bachelor's in Science in Computer Engineering | GPA: 3.72/4.0   *Konya, Turkey*
Graduation Project: *Autonomously Navigated Agent Using Reinforcement Learning*
Advisor: Kasim Oztoprak

AWARDS AND ACHIEVEMENTS

2024   **Granted of 9-month program; top 10% of 500+ applicants for technical skills**, Fatima Fellowship
      Dean's Honor Award, Hacettepe University

2023   **Achievement Award**, Aselsan

2020   **Best Course Project Award**, CENG3204 Artificial Intelligence

2019   **Best Movie Award**, Erasmus+ Project (Interstellar Inclusion)

2018   **Awarded $6,000 for a summer internship grant at Michigan State University**, KFAU

2016-21   **Dean's Honor Award**, KFAU
      2nd highest rank in the faculty, KFAU
      Recipient of merit-based full scholarship and monthly stipend by Dean's Office, KFAU

ACADEMIC RESEARCH EXPERIENCE

Fatima Fellowship   Sep 2024-Present
Tarek Naous, Georgia Institute of Technology   *Remote*
– Project: Multilingual Multicultural Redteaming of LLMs

Hacettepe University Computer Vision Lab   Feb 2022-Present
Dr. Erkut Erdem, Dr. Aykut Erdem, Hacettepe University   *Ankara, Turkey*
– Few-Shot Learning Evaluation of Multimodal LLMs: arXiv'24
– Zero-Shot Linguistic Evaluation of Video Language Models: ICLR'24

Network and Architecture Research Lab   Sept 2019- Jun 2021
Dr. Kasim Oztoprak, Konya Food and Agriculture University   *Konya, Turkey*
– Teaching Computer Architecture from Bits and Bytes: PeerJ Comp. Sci. Journal'24 (Peer Reviewed)
– Speculator and Influencer Analysis in Stock Market Using Social Media: IEEE Big Data'20

Food Sensory Lab   Aug 2018
Dr. Sungeun Cho, Michigan State University   *MI, USA*
– Project: Exploring Sleep-Eating Habits Using Python and Bayesian Analysis for Industry Insights

INDUSTRY RESEARCH EXPERIENCE

Aselsan   Nov 2021 - Present
Mid-Level Software Engineer   *Ankara, Turkey*

○ Led the *Coding Assistant* project for use on the internal network, helping streamline coding tasks.
○ Fine-tuned *CodeGen2.5* to support IBM Rhapsody code, handling unique types and macros.
○ Implemented user interface with *Chainlit* for optimal performance.

Morten Inc. Jun - Sept 2020
Machine Learning Engineer Intern *Istanbul, Turkey*

- Created a *Knowledge Graph* to catalog authors and citations using *GPT-2, Python, and MongoDB.*
- Built a *GPT-2* to application to identify future tasks in academic papers, aiding in paper clustering.

INDUSTRY EXPERIENCE

TUBITAK SAGE Feb - Jul 2021
Software Engineer Intern *Ankara, Turkey*

- Engineered a C# *multi-threading application* using *N-tier Architecture* for missile data visualization.
- Built a C# *indexer app* for a library system to organize and retrieve information from diverse sources.

Air Electronic Warfare Systems Engineering Trading Inc. Jun - Sept 2019
Embedded Software Eng. Intern *Ankara, Turkey*

- Built a Memory Map, conforming to *MIL-STD-1553* protocol using *C* and *VHDL.*
- Implemented a finite state machine for digital-to-analog signal conversion using *LTC-2601* standards.

PUBLICATIONS & PRE-PRINTS

arXiv 2024 Evaluating Linguistic Capabilities of Multimodal LLMs in the Lens of Few-Shot Learning
M Dogan, I Kesen, I Calixto, A Erdem, E Erdem

ICLR 2024 ViLMA: A Zero-Shot Benchmark for Linguistic and Temporal Grounding in Video-Language Models
I Kesen, A Pedrotti, **M Dogan**, M Cafagna, EC Acikgoz, L Parcalabescu, I Calixto, A Frank, A Gatt, A Erdem, E Erdem

PeerJ Comp. Sci. 2024 Teaching computer architecture by designing and simulating processors from their bits and bytes
M Dogan, K Oztoprak, MR Tolun

IEEE Big Data 2020 Speculator and Influencer Evaluation in Stock Market by Using Social Media
M Dogan, O Metin, E Tek, S Yumusak, K Oztoprak

OPEN SOURCE SOFTWARE/DATA

ViLMA Benchmark ⍟ ilkerkesen/ViLMA
ViLMA (Video Language Model Assessment) benchmarks Video-Language Models in linguistic and temporal grounding across five dimensions: action counting, situation awareness, state change, rare actions, and spatial relations.

DoMe Architecture Simulator ⍟ omer-metin/CPU16-Simulator ⍟ mustafaadogan/RISC16-Verilog ▶ YouTube Playlist
The DoMe architecture features a custom instruction set and data-path with 18 essential instructions for memory and register operations. A user-friendly desktop simulator, built in Python with PyQt, enables execution of assembly programs while displaying real-time memory and register values. The design and functionality were verified through a Verilog implementation in the ISE development environment.

Stock Market Analysis Datasets k Tweet Dataset k NASDAQ Value Dataset ⍟ omer-metin/TweetCollector
This project utilizes two datasets: one consisting of 3.4 million NASDAQ-related tweets, which helps identify market speculators and influencers by collecting tweet content, user information, and engagement metrics through Selenium (Tweet-Collector) and storing them in an SQLite database, and another containing daily market share value changes for Amazon, Apple, Google, Microsoft, and Tesla from mid-2010 to mid-2020.

VOLUNTEERING ACTIVITIES

Erasmus Youth Exchange Project, *Interstellar Inclusion* Oct 2019
Participant *Perugia, Italy*

- Actively engaged in fostering understanding and combat *racism* and *xenophobia* by peer experiences.
- Collaborated in a theater performance with a diverse group to address educational access challenges.
- Created a short movie on Freedom, winning the '*Best Movie*' accolade among five nominees. ▶ Movie
- Delivered a presentation on migration in Turkey to 30+ youngsters from diverse backgrounds.

Erasmus Youth Exchange Project, *Sail Entrepreneurship* May 2018
Participant *Nelijärve, Estonia*

- Fostered open communication and encouragement among a group of 35+ participants.
- Developed business concepts focusing on social entrepreneurship using the *Business Canvas Model.*

LANGUAGES

- Fluent in English (written and spoken)
- Beginner in German
- Fluent in Turkish (Native)

ADDITIONAL EXPERIENCE

KFAU Robotics Club, Member of Board Jan 2019 - Sept 2021
IEEE KFAU Student Branch, Founding President Jan 2018 - Oct 2019
International Youth Camp, Participant Aug 2017