

ABDULKADIR EROL

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EDUCATION

Georgia State University, Atlanta, USA

August 2023 - June 2025 (Anticipated)

M.Sc. in Computer Science

- Coursework: Advanced Machine Learning, Deep Learning, Advanced Text Processing & Large Language Models, Data Mining

EPITA, Paris, France

February - May 2022

Erasmus+ Exchange Program in Data Science & Analytics

- Coursework: Machine Learning with Python, Mathematics for Data Science, Foundations of Statistical Analysis & Machine Learning, Data Exploration & Preparation

Bilkent University, Ankara, Turkey

September 2017 - July 2023

B.Sc. in Computer Engineering

- Coursework: Discrete & Combinatorial Mathematics, Probability & Statistics for Engineers, Introduction to Statistics, Linear Algebra & Differential Equations, Algorithms

RESEARCH INTERESTS

Toxicity Analysis Through Red Teaming LVLMs, Robustness & Safety of LLMs & LVLMs, LLMs for Mental Health Applications

PUBLICATIONS

Playing Devil's Advocate: Unmasking Toxicity and Vulnerabilities in Large Vision-Language Models

A. Erol, T. Padhi, A. Saha, M. E. Aktas, U. Kursuncu

Under Submission

Examining Large Language Models: A Comprehensive Assessment from a Mental Health Lens

J. K. Mandivarapu, A. Erol, T. Padhi, G. Kumar, C. R. Larrison, U. Kursuncu

Under Preparation, arXiv preprint coming soon

RESEARCH EXPERIENCE

Graduate Research Assistant (GRA)

August 2023 – Present

Georgia State University, Atlanta, GA

Working with [Prof. Ugur Kursuncu](#) on Large Language Models (LLMs) and Large Vision-Language Models (LVLMs) with applications to Online Toxicity and Healthcare Informatics:

- Working on *toxicity analysis* through *red teaming* to explore vulnerabilities of LVLMs, including *LLaVA*, *InstructBLIP*, *Qwen*, and *Fuyu*, against *persuasive prompting strategies* informed by social theories.
- Working on *hard/soft prompts*, *prompt engineering*, *fine-tuning*, and *knowledge graphs* to enhance the robustness and safety of LVLMs.
- Working on comprehensive evaluation of LLMs, including *Llama* and *GPT-3*, for mental health applications, focusing on metrics such as *sympathy*, *empathy*, *bias*, *toxicity*, *readability*, and *coherence*.

SKILLS

Programming Languages and Libraries: Python (NumPy, Scikit-learn, TensorFlow, PyTorch, Huggingface, Keras)

Deep Learning Frameworks: TensorFlow, PyTorch, Keras

Natural Language Processing (NLP): NLTK, SpaCy, Huggingface Transformers

Data Visualization: Matplotlib, Seaborn

Graph Neural Networks (GNNs): PyTorch Geometric, NetworkX

WORK EXPERIENCE

Candidate Engineer

February 2023 - August 2023

TUBITAK (The Scientific and Technological Research Council of Turkey) YTE, Ankara, Turkey

- Worked on a Product Tracking System using Java (Spring) and PostgreSQL as a 29-member team for the Turkish Medicines and Medical Devices Agency.

Summer Intern

August 2022 – September 2022

Azerion, Istanbul, Turkey

- Implemented a donation system for a Twitch-like streaming platform using JavaScript and React.
- Built a back-end for real-time peer-to-peer chat and video conferencing during online gameplay using Socket.io, WebRTC, Firebase, and Postman.

Summer Intern

June 2021 – July 2021

Netcad Software, Ankara, Turkey

- Implemented an autonomous system for autonomy-required sustainability systems using JavaScript, HTML and CSS.

EXTRACURRICULAR ACTIVITIES

- 2017 - 2023 — **IEEE Bilkent Student Branch.** Publicity & PR Coordinator (2018-2019), IAS Founding Chairman (2019), Vol – E Project Founding Coordinator (2019-2020), Executive Committee Treasurer (2020-2021), Counsellor (2022-2023).
- 2017 - 2022 — **Social Awareness Projects.** Intermediate in Turkish Sign Language. Organized events for “children who have a high level of hearing loss” and taught sign language to more than 100 college students.
- 2019 - 2020 — **IEEE Turkey Student Branches.** Publicity & Design YouTube Coordinator.

AWARDS AND ACHIEVEMENTS

- 2017 - 2023 — Bilkent University Comprehensive Scholarship: Full tuition waiver & stipend during the B.Sc. Program.
- 2023 — Ranked 18th in the Academic Personnel and Postgraduate Education Entrance Exam (ALES) among 150 thousand applicants in Turkey.
- 2017 — Ranked 934th in the Nationwide University Entrance Exam (LYS) among 2 million students
- 2017 — Ranked 1st in Yozgat Şehitler Science High School, GPA: 97.6/100
- 2015 — Outstanding Performance in AP Computer Science, North Oconee High School
- 2010 — National finalist in National Chess Tournament