KAZIM TIMUÇIN UTKAN

AI Research Engineer

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EMPLOYMENT

R&D Researcher (TÜBİTAK 1505)   July 2025 – Present
Turkcell & Istanbul Technical University   *Istanbul, Türkiye*

– **Developed** a high-performance ensemble learning system (**XGBoost, LightGBM, CatBoost**) for administrative tracking, utilizing advanced feature engineering to significantly surpass human benchmarks.

– **Architected** an LLM-driven data correction pipeline to automate complex preprocessing and deployed the solution as a scalable service for Turkcell's pre-legal workflows.

Working Group Member   Jan 2025 – Present
COST Association   *Remote / Europe*

– Contributing to international research actions (CA22145) focused on Computational Techniques in Tabletop Games Heritage and AI-driven analysis of game dynamics.

Lecturer (Digital Game Design)   Oct 2024 – Present
Istinye University   *Istanbul, Türkiye*

– Delivering advanced undergraduate courses on **Intelligent Agents** and **Machine Learning**, teaching architectures for game AI and autonomous decision-making systems.

AI R&D Team Lead   Aug 2024 – July 2025
MLPCare   *Istanbul, Türkiye*

– **Architected** a RAG-based machine translation pipeline using **LangChain** and **OpenAI** models, integrating a human-in-the-loop feedback mechanism that iteratively improved translation quality.

– **Deployed** the system via **Docker** and **FastAPI**, reducing translation latency from days to real-time (seconds) and cutting operational costs by ∼99% compared to external vendors.

– **Engineered** an ensemble learning framework (**XGBoost** & **Random Forest**) for disease prediction (TÜBİTAK 1501), handling end-to-end data preprocessing and feature selection.

– **Implemented** an **LSTM**-based deep learning model for time-series forecasting of hospital revenue and patient inflow (TÜBİTAK 1507), optimizing resource allocation strategies.

Research Assistant   Aug 2022 – July 2024
Istinye University   *Istanbul, Türkiye*

– **Developed** 'Company Agent Swarm' using **AutoGen** framework, designing a multi-agent orchestration layer for automated email management and query resolution.

– **Engineered** automated content generation agents for social media platforms using LLMs, deploying bots that synthesized real-time news feeds with high relevance.

– **Assisted** in the delivery of undergraduate data science and programming courses, mentoring students on software projects and managing laboratory sessions.

Research Engineer   Dec 2022 – March 2024
Istinye University MIS Lab   *Istanbul, Türkiye*

– **Architected** a deterministic simulation workflow, implementing a custom state-transition logic (Observation → State → Response) to model audience psychology.

– **Conducted** a large-scale visual bias analysis on 6,000+ synthetic images; co-authored findings in *CRC Press* titled "Ex Machine, Next Machine, and Still Biased Machine".

– **Engineered** a semantic category matching algorithm for **Entegra Bilişim**, achieving **10x higher accuracy** in cross-market taxonomy alignment through automated feature extraction.

Data Scientist   Sep 2021 – May 2022
Datafirst.store   *Istanbul, Türkiye*

– **Architected** the sales forecasting infrastructure for **e-bebek**, optimizing inventory management using **XGBoost** and **LightGBM** ensembles.

– **Implemented** stress detection algorithms for a gamified Apple Watch application, analyzing biometric signals to classify user reactions in pediatric groups.

– **Developed** a license plate recognition pipeline using **OpenCV** and **Tesseract OCR**, applying classical computer vision techniques for efficient edge processing.

SELECTED PROJECTS

APA 7 Citation Helper (tchain.ai): Engineered a specialized GPT agent for automated academic citation formatting, currently serving **50K+ users** with a **4.3/5.0 satisfaction rating** on the GPT Store ↗.

Automated ECTS Transfer System (Beta): Developing an autonomous agentic framework using **LangChain** and **LangGraph**, utilizing semantic similarity to match cross-university curriculums with high precision.

AI-Powered Exam Grading Pipeline (Beta): Architecting an automated assessment workflow utilizing **LangSmith** for evaluation and **LangGraph** for orchestration, ensuring consistent grading standards.

EDUCATION

Ph.D. in Industrial Engineering   **2024 – Present**
Istanbul Technical University   *Istanbul, Türkiye*
 – Focus: Autonomy of Large Language Model Agents (LLMs for Automated Personalized Feedback ↗).

M.Sc. in Artificial Intelligence Engineering   **2024**
Üsküdar University   *Istanbul, Türkiye*
 – Thesis: *Investigating the efficacy of Large Language Models in automating B2B communications* ↗.

B.Sc. in Mechanical Engineering   **2020**
Trakya University   *Edirne, Türkiye*
 – Focus: Robotic applications and interdisciplinary AI integration.

INVITED TALKS

"AI Applications in Migration Studies" – UNESCO MOST School & Istinye Univ.	July 2025
"Can Artificial Intelligence Fall in Love?" – Uludağ University	June 2025
"Next-Generation Artificial Intelligence in Games" – Gedik University	May 2025
"Can Artificial Intelligence Replace Humans?" – Atatürk University	Dec 2024
"A Mirror to Humanity: Artificial Intelligence" – Trakya University	Dec 2024
"New Borders of Humanity" – Istinye University	Nov 2024

LANGUAGES AND TECHNOLOGIES

Tech Stack: Python, SQL, LangChain, LangGraph, LangSmith, AutoGen, OpenAI API, PyTorch, TensorFlow, Scikit-Learn, FastAPI, Docker
Languages: Turkish (Native), English (C2 - Proficient)

PUBLICATIONS

Utkan, K. T., & Öztayşi, B. (2025). *Large Language Models for Automated Personalized Feedback in SQL Education* ↗. IN-FUS.

Utkan, K. T., & Ozdemir, S. (2024). *GPT-based Audience Attention and Emotion Analysis* ↗. CRC Press.

Unal, C., ..., **Utkan, K. T.**, et al. (2024). *Ex Machine, Next Machine, and Still Biased Machine* ↗. CRC Press.