

Muhammed Yusuf Kartal

AI Engineering Student (BSc)

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Summary

Aspiring AI engineer and researcher with an entrepreneurial mindset. Focused on problem solving, practical experimentation, and building reliable, useful AI systems.

Skills

AI

RAG, NLP, Retrieval & Embeddings, AI Agents, Model Evaluation, Prompting, Computer Vision

Tech Stack

Python, C/C++, Java, PyTorch, scikit-learn, pandas/NumPy, Docker, Hugging Face, FAISS, Qdrant, OpenAI Agents SDK, LangChain, LangGraph, Azure, FastAPI, Git, Linux, SQL

Soft skills

Leadership, teamwork, rapid prototyping

Projects

FinLabs, Co-Founder, Developer - Mobile platform for small-medium individual investors in Turkey to make better-informed decisions on BIST stocks and TEFAS funds, with live market data, financial ratio calculation, KAP disclosures, and a market bulletin; the main aim is an AI chatbot and analysis system that combines stock and fund information. - Built financial-data workers on DigitalOcean, various frontend and backend features, and completed Google Play and App Store publication for the early version.	04/2026 – 09/2026
AIris, Co-Founder, Developer - All-in-one AI finance toolkit for multi-format data ingestion, querying documents, validation/reporting, real-time market updates, advanced news display, and fraud/calculation checks. - Built core agent and RAG pipelines, automated news clustering & aggregation, various features on frontend and backend.	01/2025 – 04/2026
Local LLM and Retrieval Benchmarking, Sole Developer - Customizable local benchmarking pipeline for LLMs and embedding/retrieval models. - Runs on user datasets or a default set to compare models on real workloads and choose the best fit beyond generic web benchmarks. - Evaluates LLMs across 15+ modular test categories.	05/2025 – 07/2025
TEKNOFEST 2024 AI in Healthcare Competition, Breast Cancer Detection/Classification and Mammography Report Analysis, Team Lead - Led Natural Language Processing track; project advanced past preliminary evaluation stage to top-150/550+ teams. - Coordinated model training/eval and team delivery across CV and NLP tracks. - Achieved F1=0.85 (NER) and F1=0.97 (classification) in NLP track.	02/2024 – 08/2024

Mind Plateau - A Mobile Platform for Mind Games Education, Co-Creator - Procedurally generates puzzles (variable difficulty) with tutorials, progress stats, and live-class support. - Pilot studies with students/instructors showed strong usability and faster solve times. Demo Video ↗ - Conducted a study to demonstrate the correlation between cognitive ability and Mind Games solving skills.	09/2020 – 05/2022
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Work Experience	
Generative AI Engineering Intern, Treomind ↗ - Developed an IBM i legacy-code analysis platform for RPG/CL systems, combining static parsing, privacy masking, LLM-based code summarization, call/data-flow graph extraction, and interactive HTML visualizations. - Built an Informatica PowerCenter-to-Oracle Data Integrator (ODI) migration pipeline that parses ETL XML exports into structured representations, generates lineage and field-level mapping graphs, and produces ODI 12c Groovy scripts with Azure OpenAI. - Implemented validation and review workflows to improve LLM-output consistency, manage long-context workloads, and support reliable enterprise-system modernization.	01/2026 – 04/2026 Ankara, Turkey
AI Engineering Intern — Work subject to NDA, ROKETSAN ↗ Worked on advanced RAG systems and LLMs—retrieval, reranking, generation and evaluation workflows.	05/2025 – 08/2025 Ankara, Turkey

Education	
Bachelor's degree, Artificial Intelligence, TOBB University of Economics and Technology Current GPA: 3.95	09/2023 – 06/2027
High School Diploma — IB Diploma, <i>Kartal Anadolu İmam Hatip Lisesi — International Baccalaureate</i> High School Diploma Grade: 98.2/100 — IB Diploma Score: 42/45	09/2018 – 06/2023

Publications	
LuminaConsent: AI-Driven Standardization and Quality Enhancement of Urological Informed Consent Documentation, Northern Clinics of Istanbul Co-author. Developed a RAG-based system for urological consent forms; outperformed standard and specialist-written forms in a blinded evaluation across 10 procedures. https://doi.org/10.14744/nci.2026.93296 ↗	04/2026
SPD-RAG: Sub-Agent Per Document Retrieval-Augmented Generation, arXiv preprint Second author. Introduces a hierarchical multi-agent framework that decomposes long-context question answering along the document axis, utilizing dedicated document-level agents to enhance scalability, answer quality, and cost-efficiency. https://arxiv.org/abs/2603.08329 ↗	03/2026
RAGTurk: Best Practices for Retrieval Augmented Generation in Turkish, EAEL SIGTURK 2026 Co-author. Introduces a comprehensive Turkish RAG dataset and benchmarks seven pipeline stages, identifying Pareto-optimal configurations that maximize factuality for a morphologically rich language. https://aclanthology.org/2026.sigturk-1.15/ ↗	03/2026

RAGSmith: A Framework for Finding the Optimal Composition of Retrieval-Augmented Generation Methods Across Datasets, *arXiv preprint*
First author. Proposes a modular, evolutionary search framework optimizing retrieval-augmented generation pipelines across multiple domains.
<https://arxiv.org/abs/2511.01386> 

11/2025

Awards	
Turkish Programming Contest (TPC'25) – 3rd Place , <i>inzva (BEV)</i>	11/2025
TEKNOFEST 2025 – Financial Technologies Competition, 3rd Place , <i>TEKNOFEST</i>	09/2025
The II Open International Olympiad in Informatics (OIOIUS 2024), Gold Medal , <i>Yagshygeldi Kakayev International Oil and Gas University</i>	04/2024
Regeneron ISEF 2022 – Software Systems Category, Fourth Award , <i>Regeneron ISEF</i>	05/2022
TÜBİTAK 2204-A National High School Research Projects – Software Category, 2nd Place , <i>TÜBİTAK</i>	06/2021

Languages	
Turkish — Native/Bilingual	English — Proficient TOEFL iBT – 106/120 (C1) TOEFL ITP – 653/677 (C1)
Arabic — Basic	Chinese — Basic