

AYDA FIROUZI

Istanbul, Turkiye

☎ (+90) 5343505847 | ✉ aydafirouzy@gmail.com | [in aydafirouzi](https://www.linkedin.com/in/aydafirouzi) [Github](https://github.com/aydafirouzi)

RESEARCH INTRESTS

My research aims to give a foundational vision to software engineering and Agentic AI, turning fragile scripts into smart systems that navigate the messy web without constantly breaking down. I love bridging practical web automation with intelligent systems, especially when it comes to capturing and handling multiple complex data types across diverse platforms. My work directly spans software engineering, AI, explainable AI, deep learning, natural language processing, and human-computer interaction. In addition, I am deeply interested in optimizing LLMs and training specialized models to master structured environments.

EDUCATION

Istinye University (*Istanbul, Turkiye*) Oct 2023 - Sep 2025

Master of Data Science **CGPA:** 3.38 / 4.00

Thesis on “Software Test Cases Prioritization using Data Analysis and Machine Learning Algorithms”

University of Tabriz (*Tabriz, Iran*) Sep 2018 - Jul 2023

Bachelor of Materials and Metallurgical Engineering **CGPA:** 18.18 / 20.0

Finall Project: Predicting Thermophysical Behavior of Phase Change Materials Using Machine Learning.

Relevant Coursework

Guided Research; Data Science; Machine Learning Operations; Database Applications; Deep Generative Models; Optimization Methods; Software Modeling and Design

PUBLICATION & SUBMISSIONS

- **Predicting Thermophysical Behavior of Iconic Liquid-Based Fatty Acid Phase Change Materials Using Machine Learning Algorithms.**
In Progress
Ayda Firouzi, Mohammad Alipour
- **Coverage-driven Software Test Case Prioritization Using Structural Feature-Oriented Machine Learning.**
Submitted to Springer, Iran Journal of Computer Science.
Ayda Firouzi, Bahman Arasteh
- **Effectiveness of Real-Time AI-Guided Surgical Decision Support on Operative Time and Intraoperative Blood Loss: A Meta-Analysis of Controlled Clinical Studies.**
Submitted to Springer, BioMedical Engineering Online
Ayda Firouzi, Mahsa Asadi Anar
- **Machine Learning Algorithms for Predictive Analytics in Big Data.**
9th International Conference on Applied Researchers in Science and Engineering, ICAR 2026. Oral.
Ayda Firouzi

RESEARCH EXPERIENCE

Marmara University | Undergraduate Researcher

Oct 2025 - Feb 2026

Supervisor: Prof. Cengiz Bahcekapili

- Designed a scalable ETL pipeline scraping 4 years of residential price index data across 81 Turkish cities, reverse-engineering Cloudflare-protected REST APIs via browser DevTools and Selenium-based session extraction.
- Processed and normalized raw JSON outputs into multi-currency Excel exports and built **Tableau dashboards** enabling comparative temporal analysis of year-over-year price trends across 4 years.
- Designed and trained a **neural network** for one-year-ahead residential price forecasting.

Supervisor: Assoc. Prof. Bahman Arasteh

- Led a **metaheuristic test data generation** project, implementing algorithms across benchmark programs and building a full-stack **Vue.js pipeline** to automate **feature extraction** from HTML coverage reports, eliminating manual processing across 1,158 test instances.
- Extracted features per test case and trained **classification and regression models** to predict test effectiveness and coverage quality.

Istinye University PcLab | Undergraduate Researcher

Oct 2025 - Feb 2026

Supervisor: Assoc. Prof. Okan Yaşar

- Designed an end-to-end **ML classification pipeline** to predict student dropout risk from 840+ records, applying multi-factor risk scoring across GPA, faculty, payment status, and scholarship variables.
- Built a **RAG-based** querying system using **Qdrant vector database** and a locally deployed **LLM**, enabling natural language exploration of structured student data.
- Developed a **FastAPI REST** backend and interactive **Streamlit dashboard** for real-time visualization; containerized the full system with **Docker** for reproducible deployment.

ACADEMIC EXPERIENCES

- **Teaching Assistant** in the “**Large Language Models**” course under the supervision of Dr. Okan Yasar at Istinye University. (Nov. 2023 - May 2024)
- **Teaching Assistant** in the “**Machine Learning Applications in Business**” course under the supervision of Dr. Peren Jerfi at Istinye University. (Feb.2023 - Jun. 2024)
- **Research Assistant** in the “**Advanced Programming**” course under the supervision of Dr. Pedram Salehpour at the University of Tabriz. (Sep. 2022 - Feb.2023)
- **Teaching Assistant** in the “**Fundamentals of Computer Programming**” course under the supervision of Dr. Mohammad Alipour at the University of Tabriz. (Sep. 2021 - Feb. 2022)

OFFERS, HONORS, AWARDS, & LEADERSHIP

- **Technical Lead, ISU Artificial Intelligence Society:** Led technical initiatives and projects.
- **High Honor Student:** Recognized for outstanding academic excellence across 4 consecutive semesters.
- **Attained the 233rd rank** in the Mathematics section of the university entrance exam (Konkur) among 160,000 Participants.
- Progressed to the **2nd stage of the Scientific League Olympiad** in the field of Mathematics for students after successful completion of the 1st stage.
- **Successfully secured admission through the selective entrance exam (SAMPAD)** among students from three cities.
- **Member of the Computer Engineering Scientific Association, University of Tabriz:** coordinating programs and seminars.

TECHNICAL SKILLS, CERTIFICATIONS, & PROFESSIONAL SERVICE

- **Technical Skills** Python Programming | Selenium Automation | Data Parsing (BeautifulSoup) | C++ | SQL Databases | Version Control (GIT) | Linux Environment | Cloud platforms (AWS, GCP, Azure)
- **Machine Learning and Deep Learning:** PyTorch Framework | Numpy for Numerical Computing | Pandas for Data Manipulation | Neural Network Architectures | Natural Language Processing(NLP) | Genetic Algorithm Implementation | Matplotlib, Seaborn for Statistical visualization | Qdrant
- **Other Skills:** Tableau | Power BI | Agile Methodologies | Scrum Project Management | Data-driven Decision Making and Analysis | Web Scraping/Crawling | RAG systems

VOLUNTEERING & HOBBIES

- **Hobbies:** Swimming and tennis for physical activity; classical music, piano, and violin. Competitive chess player with a strong analytical interest in the game.
 - **Volunteer Mentor:** Girls Who Code, mentored high school students on Python and web dev.
 - **Participated in academic paper review sessions**, evaluating research submissions and providing structured feedback on methodology, clarity, and contribution.
-

LANGUAGES

- **Persian, Turkish, and Azerbaijani** (Native and/or Bilingual)
 - **English** (TOEFL iBT 100)
 - **German** (A2)
-

REFERENCES

- **Prof. Bahman Arasteh.** *Professor at Istinye University.*
Email: bahman.arasteh@istinye.edu.tr
- **Assoc. Prof. Dr. Okan Yaşar.** *Associate Professor at Bahçeşehir University.*
Email: okan.yasar@bau.edu.tr
- **Prof. Dr. Cengiz Bahçekapılı.** *Professor at Marmara University.*
Email: cbahcekapili@marmara.edu.tr
- **Prof. Dr. Hüseyin Ozan Tekin.** *Professor at the University of Sharjah.*
Email: htekin@sharjah.ac.ae
- **Peren Jerfi Canatalay.** *Associate Professor at T.C. İstanbul Beykent Üniversitesi*
Email: jerficanatalay@beykent.edu.tr