

## ALARA ZEYBEK

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### IHSAN DOGRAMACI BILKENT UNIVERSITY

BSE in Computer Science. IELTS: 7.0

### TEVFIK FIKRET HIGH SCHOOL (LYCÉE TEVFIK FIKRET - LabelFrancEducation)

Graduated with high honors and baccalaureate equivalent diploma, %50 scholarship. Dalf B2

Ankara, Turkey

September 2021 - June 2025

Ankara, Turkey

September 2009 - June 2021

## RELEVANT EXPERIENCE & TECHNICAL PROJECTS

### GOOGLE LENS / GOOGLE

#### Step Technology Intern

Engineered the backend migration of Google Lens, focusing on confidence filters that validate and refine object detection outputs from Lens ML models. Refactored outdated Python manual filtering modules, significantly improving maintainability and reducing manual intervention. Designed and implemented C++ based filtering components to manage and improve confidence handling algorithms. Conducted usability testing and contributed to infrastructure upgrades that enhanced system performance and scalability. My contributions remain active in the production environment today.

Zurich, Switzerland

July - October 2023

### DA VINCI AI / JOTFORM

#### Data Science Intern & Data Science Part-timer

Contributed to the **AI Agent project** by developing a conversational Agent Builder [prototype](#) with dynamic knowledge acquisition, persona assignment, and real-time messaging. Designed the frontend and implemented backend logic (Flask, Docker) with prompt engineering for contextual responses. Improved reliability and scalability by redesigning error tracing for the image endpoint, fixing critical bugs, and enhancing system maintainability. Implemented a real-time phone call prototype as an alternative to the existing voice system.

Ankara, Turkey

August 2024 - June 2025

### DA VINCI AI / JOTFORM

#### AI Engineer

Developed a **real-time AI voice agent** system with **sub-3-second average response times**. Designed for interruption-aware, natural conversations in real-world conditions. Built a **multi-agent architecture** where agents collaborate via function calling and message passing to support knowledge retrieval, persona switching, and dynamic workflow execution. Implemented specialized agents for temporary user engagement during response generation, intent understanding, paraphrasing, and structured data collection. Integrated **speech-to-text**, **text-to-speech**, and telephony through streaming pipelines, and designed robust conversation and state management to handle complex dialog flows. Optimized reliability and performance under noisy audio, partial inputs, and dynamic interactions in production, while contributing to embedding solutions ensuring interoperability across voice, chat, and form-based web interfaces.

Ankara, Turkey

September 2025 - Present

**Plutos Equities (Azure, FastAPI, React.js, LSTM):** Awarded graduation project applying **big data preprocessing**, **LSTM**, **GRU**, and **NLP** to forecast key financial metrics for top 100 NASDAQ-listed firms. Built a multimodal ML pipeline combining time-series analysis, sentiment scoring from financial texts, and advanced feature engineering. [Plutos Info](#)

**Hitchhiking App (Java, Android Studio):** Uber-inspired mobile app for intra-campus ride-matching.

**Bilco (.NET, Flutter, SignalR, PostgreSQL):** Web marketplace for secondhand goods with real-time messaging feature. [Bilco](#)

**Ticketify (Flutter, Flask, Docker):** Web ticket marketplace with advanced **SQL** queries and database management. [Ticketify](#)

**Data Privacy in Internet Voting Systems Cryptographic Analysis (Mixnets, HE, ZKP):** Comparative study of e-voting systems in 4 different countries. Analyzed cryptographic primitives and proposed a privacy framework. [Paper link](#)

**Codefume an LLM-Powered Detection and Refactoring of Object-Oriented Code Smells Research:** Developed a two-phase LLM pipeline achieving 76% complexity reduction and up to 100% smell detection across 150+ code samples. [Paper link](#)

**FlaGuesser:** Image classification research on classifying 249 national flags using k-NN, Random Forest, SVM, and CNN models, with extensive image preprocessing and data augmentation using Python, scikit-learn, and Google Colab. [Paper link](#)

**Evaluating NLP Models in Analogical Reasoning Word Transformation Tasks:** Implemented statistical NLP methods for collocation extraction using t-test, chi-square, and likelihood ratio tests on large-scale literary corpora. Fine-tuned and evaluated BERT variants models for text classification tasks, analyzing performance across hyperparameters and datasets. Paper link

## SKILLS & CERTIFICATES & VOLUNTEER WORK

**Languages:** Proficient French, Proficient English, Fluent Turkish.

**Programming:** C/C++, Python, Java, React js, HTML, CSS, Dart, SQL, .NET, System Verilog, VHDL, Flask, Git.

**2013-2018** Volleyball License, Republic of Turkey Ministry of Sports General Directorate of Sports

**2018** Kangourou Sans Frontières International Math Competition Finalist

**2019** International Contemporary Art Exhibition ICAS, Turkish American Association Izmir

**2019** Prize of French-Speaking High School Student in Turkey, Lycée Français Pierre Loti d'Istanbul and French Embassy

**2020** GSMUN participation as a delegate, University of Galatasaray

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**2019** Concordia Green House Project GSM (France): Assisted in renovating a house's exterior wall over two weeks in Bassusses.

**2022** Gündökgün Club, Library Project: Assisted in building a library at under-resourced Gokkaya Primary School.

**2021-2023** Organization Coordinator, Bilkent Photography Club: Managed events and training activities for a 491-member club.

**2024-2025** Social Media Coordinator, Bilkent EnDost TDP Club: Organized activities supporting children with disabilities.