YIGITCAN KIZIL

COMPUTER SCIENCE STUDENT

PROFILE

My name is Yiğitcan Kızıl, and I am currently a second-year Computer Science student at Hacettepe University. I have a strong passion for AI, mobile app development, and machine learning. I work with Flutter and Ionic/Angular, and I am actively involved in image processing and deep learning projects. Additionally, I focus on algorithmic problem solving and optimization techniques, with the aim of creating technology that has a meaningful impact.

WORK EXPERIENCE

- **BLUESENSE - Canada** February 2025 - Present

  Data Scientist and Artificial Intelligence Intern

  - In this job, I have been developing an advanced **chatbot** using **natural language processing** techniques and working on facial analysis through **image processing** methods. Additionally, I process facial image datasets, continuously optimizing AI models to enhance user interactions and improve facial recognition systems.

COMMUNITIES

- **ACM Hacettepe** 2023 - PRESENT

  ACM Research and Development

  - I have worked on **machine learning** and **deep learning** projects, including the **TEKNOFEST** Flying Car Simulation and Artificial Intelligence in Health competitions, as well as developing an AI-driven Non-Player Character for a Snake game.

- **Hacettepe Research and Development Society** 2024 - PRESENT

  Founding Members

ACTIVITIES

- **Inzva** 2025

  Algorithm Competition Winter Camp

  - Selected as one of 50 participants from over 300 applicants, I attended the one-week inzva 2025 Winter Camp, focusing on advanced data structures, graph **algorithms**, and **dynamic programming**. In the final contest, where teams were randomly assigned, I secured **first** place.

PROJECTS

- **High-Frequency Trading Bot** 2025 - PRESENT

  - A high-frequency trading bot is being developed in **C++** to fetch real-time stock market data from multiple exchanges using **REST APIs**. The bot compares price discrepancies across markets and executes trades within **milliseconds** to capitalize on small differences. The system utilizes **advanced data processing** and decision-making algorithms, optimized for performance and low-latency execution, ensuring efficient, **high-speed trading** even when processing large amounts of data.

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EDUCATION

2022 - PRESENT

HACETTEPE UNIVERSITY

- Computer Science
- GPA: 3.15 / 4.0

2018 - 2022

ICEL ANATOLIAN HIGH SCHOOL

- Math and Science
- GPA: 3.8 / 4.0

LANGUAGES

- English (Fluent)
- Turkish (Native)
- German (Intermediate)
- Japanese(Basics)

Language Learning Application 2024 - PRESENT

- Developed a **Flutter** application that integrates **Firebase Authentication** for secure login, dynamic flashcards for interactive learning, and an AI-powered quiz system using the **Gemini API**. Data is managed efficiently with **Firestore** to track user progress and provide a seamless experience for language learners.

Breast Cancer Classification 2024

- Created a **machine learning** solution to predict breast cancer malignancy using three models: **Logistic Regression** (~97% test accuracy), **Random Forest** (~95%), and **SVM** (~96%) on the Breast Cancer Wisconsin (Diagnostic) dataset. The models were evaluated using key metrics such as accuracy, precision, recall, and confusion matrix, with Random Forest achieving perfect training accuracy, suggesting strong learning but potential overfitting.

Brain Tumor Detection 2024

- Built a **deep learning** model using **TensorFlow** and **Keras** to classify brain tumors into four categories: glioma, meningioma, pituitary, and no tumor. The model achieves a 92.98% test accuracy and uses data augmentation techniques, including rotation and brightness adjustments. The model is evaluated using loss metrics, a confusion matrix, and a classification report.

Car Tracking and Counting 2024

- Built a real-time vehicle detection and tracking system using **YOLOv8** and **SORT**. The system counts vehicles crossing a predefined line while avoiding double-counting with tracking IDs. Efficiency is improved through **ROI masking**, and the system is adjustable for various video resolutions and hardware compatibility.

Hiragana and Katakana Study Website 2024

- Created a web application designed to help users study Japanese Hiragana and Katakana characters. The site tracks progress with correct/incorrect answer counters and allows users to focus on specific groups of characters. Built with **HTML**, **CSS**, and **JavaScript**, this tool makes learning Japanese writing systems interactive and effective.

ClearVision Defense 2024

- Enhanced image processing techniques for defense applications using **C++**. The project implements filters for noise reduction (**Mean, Gaussian**), sharpening (**Unsharp Masking**), and LSB steganography for hiding and revealing messages within images. It optimizes operations with operator overloading and dynamic memory management, storing images in upper and lower triangular matrices, ensuring both efficiency and correctness.

Cafeteria Meal Whatsapp Notifier 2023

- Developed a system that fetches Hacettepe University's daily cafeteria meal list from a public XML feed and sends it via WhatsApp using **Twilio's API**. This **Python**-based system provides real-time updates, requiring Twilio credentials and dependencies such as requests, twilio, and python-dotenv.

Weather Forecast CLI 2023

- Built a command-line interface that fetches and displays a 7-day weather forecast for a specified city using the **Open-Meteo API**. The forecast includes max/min temperatures, precipitation, and weather descriptions, with relevant emoji icons for a more engaging user experience.

HU-Load Game 2023

- Developed a mining game using **Java** and **JavaFX** where players control a drill machine to collect minerals while managing fuel. Features include gravity effects, obstacles like boulders and lava, and a clean, object-oriented code structure. The game adheres to JavaDoc documentation standards and is thoroughly tested with a checklist and demonstrated through a narrated video.