# Ibrahim Mert Surme

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## Education

**Istanbul Technical University**                                                         *Sep 2022 – Feb 2027*
*BSc in Computer Engineering*

- **GPA:** 3.31/4.0
- **Coursework:** Web Development, Data Structures and Algorithms, Object Oriented Programming, Database Systems, Microprocessor Systems, Computer Organization and Architecture

## Experience

**Software Engineer Intern** — *Intertech Information Technologies* (github )                                    *Aug 2025 – Sep 2025*

- Contributed to the development of **InterChat**, an AI-powered digital banking assistant integrating Large Language Models (LLMs) with modular financial tools. Implemented and tested frontend features using React and Vite, focusing on component-based UI design, responsive layouts, and secure user flows. Assisted in backend development with FastAPI, including JWT-based authentication, API endpoints, and SQLite database integration. Developed modules for real-time data synchronization (Central Bank of Turkey exchange rates) with caching strategies and error-handling mechanisms. Contributed to LLM integration (LangChain + Model Context Protocol), implementing tool orchestration, parameter management, and sensitive data masking. Documented challenges and solutions, gaining practical experience in full-stack and AI-driven systems.
- Tools Used: **Python (FastAPI), React, SQLite, LangChain, LangGraph, Docker**

## Projects

**YemekMetre - University Refectory Rating System** (demo )                                    *Jan 2025 – May 2025*

- Developed a university refectory meal rating system using Flask for backend operations and MySQL for database management. The platform enables students to register, rate meals, and view statistical insights on meal quality. Key features include user authentication, meal rating functionality, and a dynamic dashboard for real-time feedback visualization. Implemented a responsive UI with HTML, CSS, and JavaScript for an engaging user experience. Optimized database relationships to ensure data integrity and efficient performance.
- Tools Used: **Python (Flask), MySQL, HTML, CSS, JavaScript**

**Low-Level System Timer and Bubble Sort**                                                         *Dec 2024 – Jan 2025*

- Developed a system timer and sorting algorithm on ARM Cortex M0+ architecture. Implemented SysTick timer start/stop functions and a custom interrupt handler for precise CPU interrupt management. Designed and optimized a bubble sort algorithm with real-time performance analysis and Big O complexity evaluation. Collected execution time data for each iteration and presented results through graphical visualization. Ensured code clarity and maintainability with detailed comments.
- Tools Used: **ARM Cortex M0+ Assembly**

**Food Delivery Management System** (github )                                                         *Oct 2024 – Dec 2024*

- Developed a web-based food delivery management system using Flask for backend operations and MySQL for database management. The system efficiently handled user roles with full access for admins and restricted access for restaurant owners to manage their own data. Key features included user authentication, order tracking, menu and restaurant management, courier assignment, and real-time status updates. Implemented UI components with HTML, CSS, and JavaScript for an intuitive user experience. Optimized database relationships for seamless data handling.
- Tools Used: **Python (Flask), MySQL, HTML, CSS, JavaScript**

**Text-Based Pokémon Strategy Game**                                                         *Mar 2024*

- Implemented a text-based strategy game inspired by Pokémon using object-oriented programming principles in C++. Developed four main classes—Pokemon, Pokedex, Player, and Enemy—each with specific attributes and methods to simulate gameplay. The project included dynamic memory management, custom constructors, and interactive game mechanics such as battles and Pokémon catching.
- Tools Used: **C++**

## Skills

- **Programming:** C, C++, Python
- **Web Development:** HTML, CSS, JavaScript, React
- **Database:** MySQL, SQLite
- **Hardware Development:** Verilog HDL, Assembly
- **Version Control / Tools:** Git, Docker
- **Languages:** Turkish (Native), English (Fluent)

## Interests

- Photography
- Playing an instrument
- Gaming
- Reading about emerging technologies