

Kemal Örer - CV

Kemal Örer
Computer Engineering, Hacettepe University

1 Personal Information

Name: Kemal Örer

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University: Hacettepe University

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2 Volunteer Intern-Undergraduate Researcher

Project Name: DEEPScreen2

Place: Hacettepe University Biological Data Science Laboratory

Faculty Member: Prof. Dr. Tunca Doğan

During my internship, I worked on a project related to **AI-based Drug Discovery with Compound Image Learning with Convolutional Neural Networks**. The project focused on:

- Contributed to enhancing the existing codebase of **DEEPScreen2**, an AI-driven drug discovery system, in the areas of data processing, modeling, and visualization.
- Improved the system's ability to predict physical interactions between small molecule compounds and target proteins, facilitating the identification of new drug candidates.
- Worked on compound image learning using **Convolutional Neural Networks (CNN)** to analyze potential drug candidates.
- Processed large datasets to improve the accuracy and efficiency of the prediction models.
- Developed data visualization techniques to better understand compound structures and their biological activities.

The project is currently in its final stage, and we are preparing a research paper for submission to an international scientific journal.

The internship helped me gain experience in AI from scratch and teamwork skills through collaborative project development.

3 Intern

Company: Softtech

Team: GameOfTrades

Role: Software Engineering Intern

A simplified stock market simulation developed based on **İş Yatırım's structure**, designed to manage financial instruments, handle buy/sell operations, and automate trading processes. This project, entirely developed by myself, constituted a significant part of my internship. Gained hands-on experience in **backend and frontend development, database management**, and the **functioning of financial systems**.

Additionally, participated in **team meetings, weekly and monthly planning sessions**, and **performance tests**, gaining valuable experience through **code review sessions** where team members provided feedback on my implementations.

Trading System Development 2025

- Developed a trading system from scratch using **Spring Boot** and **Java 17**.
- Built **RESTful APIs** integrated with **Microsoft SQL Server** using **Spring Data JPA** and **Hibernate**.
- Designed a **layered architecture** (Controller, Service, Repository) to ensure modularity and maintainability.
- Implemented **order matching algorithms** and **transaction management** for financial operations.
- Applied best practices in backend development including dependency injection, ORM, and database transaction handling.

4 School Assignments

As a computer science student, I completed various assignments, including Python, Java, C++:

- Data Structures and Algorithms projects
- MotherLoad: JavaFX Game project (PDF)
- Asteroid Dash: Terminal Game project (PDF)
- ClearVision: Image processing with decrypting messages from images (PDF)

5 Relevant Coursework

- **Machine Learning (BBM406 - BBM409):** Completed laboratory-based assignments covering supervised and unsupervised learning, model evaluation, and practical implementation of machine learning algorithms.

- **Software Engineering (BBM382 - BBM384):** Participated in a lab-based course focused on group project development. Developed an **Internship Management System** as part of a team while applying software development life cycle (SDLC) practices including planning, design, implementation, testing, and code reviews.
- **Database Management (BBM371):** Gained strong knowledge of SQL and database design. Actively used **Microsoft SQL Server** and **PostgreSQL** in personal and academic projects.

6 Additional Projects and Interests

- Currently developing a personal website to showcase my projects and technical skills.
- Interested in full-stack development and continuously improving both backend and frontend capabilities.

7 Algorithms

- Solved over **100+ algorithmic problems** on competitive programming platforms such as **LeetCode**, **Project Euler** and **HackerRank**.
- Gained proficiency in data structures, graph algorithms and problem-solving techniques.
- Improved coding efficiency and analytical thinking by tackling diverse challenges across various difficulty levels.
- Developed strong debugging and optimization skills through hands-on practice with real-world algorithmic problems.