

# Syed Ebad Hyder

📍 Ankara, Türkiye ✉ ebadhaider24@gmail.com 📞 +90 531 838 90 67 in syedebadhyder 📄 ebad426623 🌐 Portfolio

## Education

Middle East Technical University  
BS in Computer Engineering

Sept 2021 – Jul 2025  
CGPA: 3.46/4.0

## Work Experience

Part-Time Computer Vision Engineer  
Aremak Bilişim Teknolojileri

Ankara, Türkiye  
Feb 2025–Present

- Developed a **Retrieval-Augmented Generation (RAG)** system for Hikrobot SDK documentation using **FastAPI**, **LangChain**, and **Google Gemini**. Implemented semantic search with **HuggingFace** embeddings stored in **Chroma**, and built the UI with **Streamlit**. Leveraged **PyTorch** and **Sentence Transformers** for NLP processing.
- Developed and optimized industrial vision systems using **OpenCV** in **Python**, **C++**, and **C#**, implementing **HDR toning** and **real-time image acquisition** with **Hikrobot cameras**. Built **Qt-based GUI modules** for camera control and enhanced code reliability through rigorous **debugging**. Successfully deployed solutions in industrial automation workflows.

Computer Vision Internship

Ankara, Türkiye

Aremak Bilişim Teknolojileri

Jan 2025 – Feb 2025

Developed machine vision solutions for rock classification using **Hikrobot cameras** and **OpenCV**, including **HSV-based segmentation**, **background subtraction**, and **real-time KNN classification** with **95% accuracy**. Processed images via **edge detection** and **feature extraction**, delivering presentations on system fundamentals.

AI Engineering Internship

Istanbul, Türkiye

Bluesense AI

Jan 2025 – Feb 2025

Developed computer vision for BlueSense's **Smart Beauty** app using **Python** and **YOLO+CNN** to detect dark circles and assess severity. Trained the model on **RoboFlow**-labeled data, achieving optimal performance through **hyperparameter tuning**. Collaborated with engineers on deployment and documented workflows in **ClickUp**.

Web and Mobile App Development Internship

Ankara, Türkiye

Fenumi

Aug 2024 – Jan 2025

Full-stack developer maintaining a **PHP** website while co-developing its **React Native** mobile counterpart, optimizing both **SQL** databases and **Postman**-tested **CRUD APIs**. Enhanced systems through **agile sprints**, balancing **frontend UX** improvements with **backend stability** refinements.

Research Internship

Ankara, Türkiye

METU

Aug 2024 – Sep 2024

Developed restaurant application from **Figma** designs to production, using **React.js/React Native** for frontends and **Django REST Framework** for APIs. Managed **SQL** databases on **DigitalOcean** with full **frontend-backend integration**.

Game Development Internship

Lahore, Pakistan

Mindstorm Studios

Jun 2024 – Jul 2024

Developed **Balloon Splash**, a hyper-casual 2D Android game in **Unity** using **C#**, implementing slingshot mechanics with **OOP principles**. Managed full development cycle from design to testing, collaborating via **version control**.

AI Internship

Ankara, Türkiye

Beren Studios

Jul 2023 – Aug 2023

Developed **AI algorithms** using **Q-learning**, **Reinforcement Learning**, and **Logistic Regression** in **Python**. Implemented **deep learning models** with **TensorFlow**, and analyzed systems via **Markov Decision Processes** and **Monte Carlo Simulation** using **Spyder IDE** and **NumPy**.

## Research & Projects

PCA-Guided Clustering for Optimal  $\beta$ -VAE

In-Progress

Developed a **PCA** and **K-Means** pipeline to optimize  $\beta$ -VAE latent dimensions, validated on **dSprites** and **MPI3D** and benchmarked disentanglement using **DCI** and **ZDiff** for improved **interpretability** and performance.

Mask Detection System

[Demo Video](#)

A real-time mask detection system using **YOLO** for AI-powered face mask recognition. Built with **FastAPI** for the backend, **React** for the frontend, and **Docker** for containerization. Deployed on **Render** for scalable cloud access.

Fashion-Laundry Hybrid App

[LaundryBuddy++](#)

Created Flutter fashion-laundry hybrid app leveraging **Gemini AI** for: care label scanning/wash optimization (**laundry**), and AI-stylist with virtual try-on (**fashion**). Built with **camera integration** and **local storage** solutions.

Learning Projects & Competition

- Calculator**: HTML/CSS/JS practice ([Link](#))
- Flappy Bird Lite**: Unity/C# game development ([APK](#))
- KODTU<sup>6</sup>**: Algorithm competition - **2nd Place**

## Skills & Interests

**Technical:** Python | Java | C | C++ | C# | HTML/CSS | JavaScript | SQL | Git | LaTeX | React.js/Native | Django REST Framework | TensorFlow | PyTorch | OpenCV | NumPy | Scikit-learn | Unity | Visual Studio | PyCharm | Jupyter | DigitalOcean | Docker | Vercel | Render

**Machine Learning:** Computer Vision |  $\beta$ -VAE | PCA | K-means | DCI/ZDiff Metrics | CNN | KNN | Decision Trees | Predictive Modeling | LLMs | Deep Learning

**Systems:** Linux/UNIX | Windows | Docker | Database Management | OOP | Cloud Deployment

**Languages:** English (C1) | Urdu (Native) | Turkish (A1)

**Sports:** Football | Swimming | Cricket | Table Tennis | Tennis | Bowling | Karting | E-Sports

## References

**Name:** İSMAİL HAKKI TOROSLU

**Title:** Professor

**Department:** Department of Computer Engineering

**Institution:** Middle East Technical University

**Email:** [toroslu@metu.edu.tr](mailto:toroslu@metu.edu.tr) 

**Phone:** +90 312 210 5585