Syed Ebad Hyder

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Education

Middle East Technical University *Sept 2021 – Jul 2025*
BS in Computer Engineering *CGPA: 3.46/4.0*

Work Experience

Part-Time Computer Vision Engineer *Ankara, Türkiye*
Aremak Bilişim Teknolojileri *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 β-VAE *In-Progress*
Developed a **PCA** and **K-Means** pipeline to optimize β-**VAE** latent dimensions, validated on **dSprites** and **MPI3D** and benchmarked disentanglement using **DCI** and **ZDiff** for improved **interpretability** and performance.

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
- **Calculator**: HTML/CSS/JS practice (Link ↗)
- **Flappy Bird Lite**: Unity/C# game development (APK ↗)

Competitions
KODTU[6]: 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

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

Systems: Linux/UNIX | Windows | Docker | Database Management | OOP

Languages: English (C1) | Urdu (Native)

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

References

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