Emir Muhammet Aran

Computer Engineering Student | Medical AI Developer

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Ankara, Turkey

Education

Gazi University
2025 - 2027

B.S. in Computer Engineering
Third Year - GPA 3.52 - Currently Enrolled

Ankara Medipol University
2022 - 2025

B.S. in Computer Engineering
Sophomore: GPA 3.70 | Freshman: GPA 3.68 (Ranked 2nd)

Work Experience

Software Developer Intern
Summer 2024

Gibrin R&D | TOBB Garaj

- Developed cross-platform mobile applications using Flutter/Dart framework
- Built real-time chat application with Firebase integration (3300+ lines of code)
- Designed IoT monitoring system integrating ESP32 hardware with cloud database
- Implemented secure authentication, role-based access control, and data encryption
- Created weather application with API integration, GPS services, and custom animations

Medical AI Projects

Brain Tumor MRI Classification System

Multi-class deep learning classifier for brain tumor detection (Glioma, Meningioma, Pituitary, No Tumor). Transfer learning with EfficientNetB3 achieving 99% accuracy with Grad-CAM visualizations for clinical interpretability.

EfficientNetB3 | 99% Acc | Transfer | Grad-CAM | ✓ DEPLOYED

Live Demo GitHub →

Breast Cancer Histopathology Detection

Deep learning system for metastatic cancer detection in histopathology images achieving 91% sensitivity (exceeds FDA screening benchmark of 90%) and AUC 0.94. Comprehensive documentation including FDA compliance considerations, ethical guidelines, and clinical validation framework.

91% Sensitivity | AUC 0.94 | CNN | Focal Loss | ✓ DEPLOYED

Live Demo GitHub →

Chest X-ray Disease Classification

Advanced deep learning system for multi-class classification of chest X-ray images, focusing on the detection of pneumonia, tuberculosis, and healthy cases. Utilizes ensemble learning with ResNet, EfficientNet, and Vision Transformer architectures. Features robust Grad-CAM visualizations for model interpretability and clinical insight. Comprehensive documentation and open-source code provided.

Ensemble Learning | ResNet | EfficientNet | Vision Transformer | Grad-CAM | ✓ OPEN SOURCE

Live Demo GitHub →

Additional Technical Projects

Computer Vision

YOLO/Faster R-CNN object detection, face recognition (OpenCV, Dlib, MTCNN), handwritten digit/character recognition (MNIST/EMNIST), transfer learning with ResNet/VGG16/MobileNet

Natural Language Processing

RNN/LSTM sequence models, transformer-based automatic subtitle translation with attention mechanisms, text classification systems

Predictive Analytics

Time series forecasting (FBProphet for Bitcoin), ensemble methods (Random Forest, XGBoost), regression models (linear, polynomial, logistic) for various prediction tasks

Mobile & IoT Development

Cross-platform Flutter applications, real-time Firebase integration, IoT sensor systems with ESP32/Arduino, cloud database connectivity

View all projects on GitHub (20+ repositories)

Technical Skills

Programming Languages

Python, C, C#, Java, Dart, LEGv8 Assembly, Bash

AI/ML Frameworks

PyTorch, TensorFlow, Keras, Scikit-learn, OpenCV, XGBoost

Data Science & Analysis

Pandas, NumPy, Matplotlib, Feature Engineering, Statistical Analysis

Development & Deployment

Flutter, Firebase, HuggingFace Spaces, REST APIs, Git, Linux

Hardware Integration

Arduino, ESP32, IoT Systems, Sensor Integration

Game Development

Unity, Unreal Engine, Rapid Prototyping

Achievements & Leadership

- **Ostim Game Jam 2025** - 1st Place Winner | Led team in rapid game prototype development
- **Pura Game Jam 2025** - 2nd Place Winner | Collaborative problem-solving under tight deadlines
- **Ankü Game Jam 2025** - 5th Place | Demonstrated creativity and technical execution
- **Ayaz Jam 2025** - 5th Place | Demonstrated teamwork and creativity
- **MEDCODES** - Board Member (2024-Present) | Presented Unity workflow training sessions
- **CYBERMEDU** - Board Member (2023-Present) | Contributing to cybersecurity education initiatives

Languages

English: Advanced (C1) | Duolingo English Test: 129/160
Turkish: Native