Yavuz Murat Yıldırım

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Education

Ondokuz Mayıs University — Samsun, Turkey
Bachelor's Degree, Computer Engineering. GPA: 2.80 — 2021 - Present

Bafra Fen Lisesi — Samsun, Turkey
GPA: 93.3 — 2017 - 2021

Experience

OMU CEITTS Lab — Samsun, Turkey
Computer Vision Engineer — October 2024 - Present

- Leading a team in AI-based smart transportation projects for TEKNOFEST, AUS UAY, UDHAM competitions.
- Awarded 2nd place in AUS and got encouragement award in UDHAM's competition.
- Developing machine learning models for traffic analysis using Python, OpenCV, and PyTorch
- Achieved 69% accuracy on road damage detection model for TEKNOFEST competition

Atakum Municipality — Atakum, Samsun
Computer Engineer Intern — August 2024 - January 2025

- Engineered a real-time pothole detection system using YOLOv8, OpenCV, and Flask, achieving 82% accuracy
- Deployed optimized YOLOv8 model on Jetson Nano, delivering edge-based detection at 20+ FPS with sub-150ms latency per frame
- Containerized the application using Docker and Docker Compose for simplified deployment
- Built a Flask PostgreSQL-based registration system for municipal kindergartens (deployed May 2025), expected to serve 300+ students

Projects & Activities

TEKNOFEST Smart Transportation Competition — Turkey
Team Leader & Computer Vision Engineer — February 2025 - Present

- Pioneered the creation of an AI-powered road deterioration assessment system, resulting in a 20% reduction in response time for repair crews after incidents and improved resource allocation strategies
- Orchestrated the full-stack development of a real-time road damage mapping and anomaly reporting system utilizing Flask, resulting in the identification of 1500+ road hazards within first month

TUBITAK 2209-A Research Program — Turkey
Researcher — March 2025 - Present

- Researching efficient small object detection under Assoc. Prof. Dr. Metin Mutlu Aydın
- Modifying CNN architectures and experimenting with alternative object detection models

Doctor Chat Bot — Personal Project

- Fine-tuned lightweight LLaMA 2 model using LoRA and 4-bit quantization on medical dataset
- Deployed the model via FastAPI with caching and rate-limiting, handling 20+ concurrent requests at <500ms latency on a T4 GPU

Art Style Classification — Personal Project

- Trained a deep learning model using PyTorch to classify artwork images into 27 distinct art styles based on the WikiArt dataset

- Created a Convolutional Neural Network (CNN) leveraging transfer learning by fine-tuning a pre-trained ResNet50 architecture, customizing the final layers for classification
- Achieved an overal validation accuracy of 51.7%

DQN for Pac-Man Personal Project
- Implemented a Deep Q-Network (DQN) agent with PyTorch to train an AI to play Ms. Pac-Man in the Gymnasium Atari environment
- Incorporated convolutional neural networks, experience replay, and epsilon-greedy policy; reached an average score of 369+ over 400 episodes

Industrial Supply-Supplicant App BIL327 Final Project
- Developed a cross-platform (Android, iOS, Web, Windows) supply marketplace application using Flutter and Dart
- Implemented core user authentication (login/registration) leveraging Firebase Authentication for secure access across the application
- Utilized Firebase Firestore as the backend database for managing and retrieving data for potentially hundreds of supply listings and user interactions
- Designed and built approximately 8 distinct user interface screens, integrated multiple Firebase services and established a testing suite with unit and widget tests using mockito

Distributed Subscription System with Custom Transport Protocol BIL304 Final Project
- Created a custom Java-based transport protocol for multi-server subscriber synchronization. Ensured thread-safe resource sharing using locks and synchronized blocks

Skills

Programming: Python, Java, C, Flutter (Dart), Ruby
AI: PyTorch, TensorFlow, YOLO, OpenCV, Hugging Face
Backend & Web: Flask, Django, SQLite, Firebase
Tools: Git, Docker
Languages: English (YDS: 90 - Professional), Turkish (Native)