

# Doğukan Parlak

Junior Computer Engineer

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## SUMMARY

Junior Computer Engineering student with backend and applied AI/ML (computer vision) experience.

## PROFESSIONAL EXPERIENCE

### Hyperever (İTÜ ARI Teknokent) - Computer Vision Intern

July – August 2025

- Enabled large-scale single-class object detection training by building and annotating a dataset of 42,000+ images using Label Studio and COCO-based annotation pipelines.
- Improved target-class discrimination against visually similar objects by training and optimizing real-time object detection models with YOLOv11, OpenCV, and Ultralytics.
- Increased model robustness and deployment readiness for integration into a robotic dog platform by developing data preprocessing and fine-tuning pipelines.

### Pasific Bilişim / YoSoft - Software Development Intern

August – October 2025

- Streamlined operational communication between a technology company and its pharmacy client network by designing and developing a WhatsApp-based bulk messaging system.
- Enabled multi-profile usage and dynamic message handling by building a Flask-based REST API with MySQL integration and session-based authentication.
- Improved system reliability and scalability for high-volume messaging workflows by optimizing database operations and API architecture.

## PROJECTS

### LLM & FOL Multi-Agent Rescue Simulator ([GitHub-LLM](#)) ([GitHub-FOL](#))

Python, Ollama, First-Order Logic, Symbolic Reasoning

- Delivered two comparable multi-agent implementations (LLM-based via Ollama, FOL-based symbolic) sharing the same simulation shell and evaluation framework by architecting a three-agent Planner-Assignment-Critic pipeline.
- Eliminated all constraint violations present in the LLM prototype (0/2 configs failed vs. 2/4 LLM runs failed) by engineering a deterministic FOL assignment engine using four formal axioms (unique assignment, capability match, priority ordering, cost minimisation).
- Quantified performance differences between both approaches across capability match, priority order, load balance, completion rate, and Actual/Optimal cost ratio by benchmarking across four reproducible configurations with a custom metrics engine; source code available on GitHub.

### Predicting Personal Movie Ratings ([GitHub](#)) - Python, scikit-learn, XGBoost, pandas, NumPy, Matplotlib

- Covered both regression and four classification schemes on 1,312 personally rated films by developing a dual-task ML pipeline training 12 algorithms (Gradient Boosting, Random Forest, SVR, XGBoost, MLP, Stacking).
- Achieved 75.3% binary classification accuracy and a best regression MAE of 0.901 by benchmarking three feature selection strategies (filter, RFE, embedded) with 5-fold cross-validation and GridSearchCV tuning.
- Identified Horror genre and Runtime as the dominant predictors of personal rating behavior by analyzing feature importance via correlation, mutual information, and permutation methods.

### Digital Game Marketplace ([GitHub](#)) - FastAPI, React, SQLAlchemy, SQLite, JWT

- Secured the full API surface across three user roles (user, developer, admin) with protected route guards by engineering JWT-based authentication and role-based authorization.
- Supported game cataloging, cart checkout flow, and order management by architecting a relational database schema (SQLAlchemy ORM, SQLite) with seven models and association tables.
- Drove structured development across the stack by designing seven modular API routers, fourteen React pages, and thirty-nine PlantUML user-story diagrams.

### Mail Sender Extractor ([GitHub](#)) - Python, Flask, Gmail API, OAuth2, REST API, JavaScript

- Simplified Gmail inbox cleanup into a single click by building a Flask web application that groups emails by sender and bulk-trashes or unsubscribes selected senders.
- Enabled secure, user-authorized access to inbox data by integrating the Gmail API with OAuth2 authentication.
- Provided a lightweight alternative for CSV-only sender statistics by developing a standalone CLI script.

## OPEN SOURCE CONTRIBUTIONS

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- **instagram\_monitor** ([PR #121](#), merged) - Delivered offline follow-relationship analysis (mutual/non-mutual/fan detection from locally cached follower data), accessible via both a CLI flag and a web dashboard modal, by adding a Pytest-tested feature.
- **DynamicNotch** ([PR #189](#), merged) - Delivered full Turkish coverage (UI, settings, Info.plist permission strings) verified by dedicated tests, by adding complete localization support.
- **ArcLauncher** ([PR #34](#), merged) - Delivered full Turkish coverage for an Android TV launcher app by adding complete localization support.

## SKILLS

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**Programming Languages:** Python, JavaScript, SQL

**Machine Learning:** scikit-learn, XGBoost, pandas, NumPy

**AI & Computer Vision:** PyTorch, YOLOv11, Ultralytics, OpenCV, Label Studio

**Web Development:** FastAPI, Flask, REST APIs, JWT, OAuth2

**Other Tools:** Git, Pytest

## EDUCATION

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**Aydın Adnan Menderes University** - Computer Engineering (English), 4th Year

*September 2022 – September 2027 (Expected)*