# AYŞENUR ARSLAN | AI ENGINEER

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## ABOUT ME

AI Engineer specializing in machine learning, natural language processing, and computer vision. Experienced in building end-to-end AI solutions using Python, deep learning frameworks, and data engineering pipelines. Combines technical proficiency with a strategic, analytical mindset to deliver impactful, data-driven technological solutions.

## SKILLS

- **Programming:** Python, C, C#, Java, SQL, HTML/CSS
- **Machine Learning:** Scikit-learn, Random Forest, SVM, KNN, Decision Trees, XGBoost
- **Deep Learning:** PyTorch, CNN, Transformers, BERT, YOLOv8, AlexNet, LSTM
- **NLP:** spaCy, NLTK, Sentiment Analysis, Turkish BERT Models (e.g., savasy/bert-base-turkish-sentiment-cased)
- **Computer Vision:** OpenCV, YOLO, SORT Algorithm, Image Processing
- **Data Engineering:** Pandas, NumPy, Data Collection, Feature Engineering, Data Labeling
- **Databases:** PostgreSQL, MySQL, MongoDB, SQLite
- **Visualization & Analysis:** Matplotlib, Seaborn, Plotly, SciPy, sklearn.metrics
- **Web Technologies:** Flask, FastAPI, React.js, Next.js, Selenium, Astro
- **Tools & DevOps:** Git, REST APIs
- **Languages:** Turkish (Native), English

## EDUCATION

**Bachelor's Degree in Computer Engineering**

*Konya Technical University | 2021-2025*

- Relevant Coursework: Data Structures, Algorithms, Database Management, Object Oriented Programming, Software Engineering, Artificial Intelligence, Machine Learning, Deep Learning, Computer Networks, Computer Architecture, Operating Systems, Computer Organization, Computer Security, Computer Graphics, Computer Systems

## EXPERIENCE

**Data Science & AI Intern | AE Software Technology Ltd.**

July 2025 – August 2025

- Developed machine learning pipelines for time series analysis and behavioral classification using sensor data.
- Engineered features and implemented automated data labeling systems to improve model training efficiency.
- Applied Random Forest with cross-validation and imbalance handling (class weights), achieving high precision in classification tasks.

**Administrative Support Staff (İŞKUR Youth Program) | Konya Technical University – Faculty and Administrative Units**

March 2025 – May 2025

- Supported organizing, classifying, and digitizing university archive documents
- Participated as a presenter and team member in the 1st International Student Cultural Festival
- Actively involved in planning, team coordination, and crisis management during the event

**Python Instructor | Kodland | Remote**

September 2024 – Present

- Delivered hands-on Python and Flask web development curriculum to 50+ students aged 12–18.
- Designed real-world project-based learning materials, resulting in 85% of students completing individual web applications.
- Mentored learners in debugging, API integration, and deployment workflows.

**AI Development Intern | PigaSoft | Konya**

July 2024 – August 2024

- Developed a license plate recognition model using YOLOv8 and OpenCV for real-time detection.
- Conducted object detection and tracking of vehicles using SORT algorithm and NumPy for data processing.
- Trained and optimized deep learning models with large datasets to improve detection accuracy and performance.

## PROJECTS

**Campground API | Data Scraping & Analysis Platform**

*FastAPI, PostgreSQL, REST API, Python*

- Built a location-based web scraping and data analysis platform using FastAPI and PostgreSQL.
- Automated campground data collection and exposed it via a RESTful API for end-to-end analytics.
- Enabled scalable data ingestion and querying for geographic insights. [GitHub]

**SentimentScope | Social Media Sentiment Analysis**

*BERT, spaCy, NLTK, Python*

- Performed sentiment analysis on Turkish tweets using hybrid ML/DL models, including fine-tuned Turkish BERT (e.g.`VRLLab/TurkishBERTweet`, `savasy/bert-base-turkish-sentiment-cased`)
- Implemented LoRA for efficient fine-tuning with minimal labeled data
- Achieved 84% accuracy in detecting public opinion trends on political and social topics.
- Demonstrated applicability for brand monitoring and social listening. [GitHub]

**Twelenium**

*Selenium, SQLite, Python*

- Developed a secure, API-free web scraper to collect public tweets for academic research, filtering by keywords and date ranges.
- Implemented input validation using a custom safety module to block malicious queries and prevent system abuse.
- Stored results in structured formats (SQLite, JSON) for downstream NLP analysis and sentiment monitoring.
- Designed with ethical scraping principles — respects rate limits, avoids aggressive requests, and ensures data privacy.
- Ideal for large-scale social media data collection in research, trend tracking, and event analysis.[GitHub]

**VisioQuery**

*YOLOv8, NLP, OpenCV, CLI, Python*

- Built a multimodal AI system that integrates YOLOv8 for object detection with NLP-based web search, using detection results as retrieval context — simulating Retrieval-Augmented Generation (RAG) principles for intelligent query resolution.
- When users submit an image, YOLOv8 identifies the objects and generates a search query using NLP.
- It runs via the Python command line. [GitHub]

**Fruit Ripeness Prediction with Hyperspectral Imaging**

*AlexNet, PCA, CARS, Random Forest, Python*

- Applied CARS (Competitive Adaptive Reweighted Sampling) and Principal Component Analysis (PCA) for dimensionality reduction on hyperspectral images to extract highly discriminative spectral features.
- Trained and compared AlexNet and Random Forest classifiers to predict fruit ripeness stages, achieving over 90% classification accuracy.
- Demonstrated the system's potential for real-world deployment in agricultural automation and non-destructive quality control in post-harvest processes. [GitHub]

**Cafe-AI**

*Next.js, Geospatial Data, RESTful APIs, Python, NLP, Web Scraping*

- Built a chatbot-style web application that recommends study-friendly cafés based on user preferences such as Wi-Fi strength, noise level, music type, and seating capacity.
- Café information and geospatial data were collected and integrated through web scraping.
- Designed an interactive NLP-driven interface enabling natural language queries (e.g., "Find a quiet café with strong Wi-Fi").
- Implemented a scoring and ranking system to deliver personalized recommendations by matching user needs with café attributes.

**E-Invoice Information Extraction System**

*LayoutLMv3, Donut, OpenCV, Python, Hugging Face*

- Developed a hybrid AI pipeline to automatically extract structured fields from Turkish e-invoices, including sender/receiver details, tax IDs, invoice numbers, itemized totals, and IBAN.
- Engineered preprocessing and JSON serialization for seamless integration into financial systems, enabling real-time automation.
- Optimized inference (~2–5 sec/invoice) with GPU acceleration, achieving over 90% accuracy on test data. [GitHub]

## CERTIFICATIONS

- BursCamp Artificial Intelligence Program – Kairu, 2025
- Security in Development – Techcareer, 2024
- Introduction to NLP – BTK, 2024
- Introduction to AI – BTK, 2023
- Game Development with Unity – BTK, 2022

## REFERENCES

Emre Büyükaslan˙ – Secretary General of the Konya Informatics Association/AE Software Technology Ltd.
Alper Kılıç – Assistant Professor, Ph.D. Konya Technical University
Nurdan BAYKAN – Assoc. Prof. Dr. Konya Technical University
Evren Üstündağ – Chief of Staff Konya Technical University

*References from academic advisors and internship supervisors are available upon request.*