Ishaq Paktin Yar Data Scientist | Backend Engineer

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B.Sc. in Computer Engineering (High Honors)

ISTANBUL AREL UNIVERSITY – *2025*

Thesis: "ClimatePulse: Multivariate Time-Series Forecasting for Air Quality & climate"

Supervisor: Asst. Prof. Mert YAĞCIOĞLU

SUMMARY OF QUALIFICATIONS:

ML Engineer building production-grade systems with measurable impact (18% forecasting lift, 98% classification accuracy). Specialized in scalable backend architecture and real-time data pipelines.

WORK EXPERIENCE:

Undergraduate Researcher

JRAVI LAB *CU Anschutz (Remote) | 07/2024 - Present*

- Improved protein function prediction accuracy from 86% to 98% using classical ML and deep models.
- Benchmarked lightweight ML models against protein language models, achieving comparable performance at lower compute cost.
- Developing species classification models for protein sequence analysis.

Software Engineer

PAREM ACADEMY *ISTANBUL | 08/2025 - Present*

- Architected and deployed Bitatlım (marketplace) and Veroz (logistics) as production systems serving real users.
- Designed high-concurrency REST APIs and real-time tracking pipelines using Node.js and PostgreSQL.
- Led infrastructure decisions (self-hosted VPS, caching, CI/CD) reducing hosting costs by 90%.
- Mentored a junior intern in backend architecture and production workflows.

IT Coordinator

ISTANBUL&I *ISTANBUL (PART TIME) | 09/2023 – 09/2025*

- Designed and deployed Django-based management system for 1,800+ users.
- Replaced fragmented Excel workflows with centralized relational database architecture.
- Built secure REST APIs for member analytics and operational tracking.
- Reduced administrative processing time by 60%.

Software Developer Intern

DEVSECURE *ISTANBUL | 02/2025 – 08/2025*

- Maintained and extended client-facing web platforms.
- Implemented backend enhancements and database improvements.
- Improved technical documentation and onboarding workflows.

KEY PROJECTS:

Bitatlım – Hyperlocal Marketplace & Logistics Platform

Next.js, NestJS, PostgreSQL, Redis, Linux VPS | Production | bitatlim.com

- Architected multi-tenant marketplace with hybrid logistics engine (Veroz).
- Built cryptographic ledger for automated multi-party payouts.
- Implemented Redis caching and real-time tracking, reducing hosting costs by 90% via optimized VPS infrastructure and CI/CD.

Veroz – Real-Time Courier Pooling System

Node.js, Express, PostgreSQL, Docker | Production | veroz.bitatlim.com

- Engineered ACID-compliant 7-state order workflow in PostgreSQL using row-level locking to eliminate concurrent courier assignment conflicts.
- Implemented dual-layer API security (JWT rotation + HMAC-SHA256) and real-time delivery tracking via SSE.

Pathogenic Feature Discovery – Deep Sequence Modeling

Python, PyTorch, SHAP | Project-Page

- Built Conv1D + Attention model for pathogenicity prediction from raw protein sequences.
- Engineered memory-efficient 8,928-dimension k-mer encoding pipeline.
- Prevented biological data leakage using taxa-aware GroupKFold splitting.
- Applied SHAP-based auditing to validate motif learning over taxonomic bias.

Air Quality Multivariate Forecasting (Thesis)

Python, PyTorch, NeuralForecast | GitHub

- Developed 7-day multi-horizon forecasts for PM10, NO2, SO2, O3 using 54 to model cross-pollutant temporal dependencies.
- Improved MAE by 18% vs ARIMA and LSTM baselines.
- Implemented rolling-origin evaluation to address seasonality and concept drift.

SKILLS:

Tech Languages: Python, TypeScript, SQL, Bash, C++

Machine Learning: PyTorch, Transformers, CNNs/RNNs/LSTMs, Time-Series Forecasting

Backend & Data: Node.js (NestJS/Express), Django, Flask, PostgreSQL, Redis, REST APIs, ETL Pipelines

Infrastructure & Tools: Docker, Linux, Git, AWS

Languages: English (C1), Persian (C1), Turkish (B2), Pashto (Native), Urdu (C1), Spanish (A2)

CERTIFICATIONS:

IBM AI Engineering – IBM Coursera (2023)

IELTS – British Council (2024)

COMMUNITY ENGAGEMENT:

Founder, i&i Book Club (90+ members, 2024)

Data Commission Volunteer, T3 AI'LE (2024)

Teaching Assistant, Bilim Üsküdar Science Center (*2023*)

Volunteer, **Sokak Lambası Association** (*2023*)