

# ALPEREN ADALAR

## Backend & DevOps Engineer

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### PROFESSIONAL SUMMARY

Backend & DevOps Engineer with 4+ years of hands-on experience designing scalable backend services and operating production cloud infrastructure. Skilled in Python (Django, DRF, FastAPI), Kubernetes, Helm, multi-node PostgreSQL, and CI/CD automation (Jenkins, GitLab CI, GitHub Actions) across AWS and on-premise environments. Strong Linux administration and shell scripting background with production monitoring experience (Zabbix, Prometheus, Grafana). Combine software engineering with infrastructure expertise to ship reliable systems end-to-end, from API design and database architecture to container orchestration, observability, and IoT/industrial integrations. Active open-source contributor and author of multiple Model Context Protocol (MCP) servers for LLM-driven infrastructure tooling (Active Directory, network operations, Proxmox, FortiGate).

### TECHNICAL SKILLS

**Cloud & Infrastructure:** AWS (EC2, S3, RDS), Kubernetes (kubeadm), Helm, Docker, Docker Compose, Rancher, Proxmox, Nginx, Infrastructure as Code (IaC)

**CI/CD, Monitoring & Automation:** Jenkins (pipelines), GitLab CI/CD, GitHub Actions, GitOps, Apache Airflow, dbt, Ansible, Prometheus, Grafana, Zabbix, Apache Superset, SonarQube, Linux Shell Scripting (Bash)

**Backend, Databases & Messaging:** Django, DRF, FastAPI, ASP.NET Core, gRPC, Celery, PostgreSQL (multi-node), Oracle (migration), MongoDB, Redis, InfluxDB, Apache Kafka, RabbitMQ, MQTT

**Programming Languages:** Python, Go, Java, C++, SQL

**Frontend & Mobile:** Vue 3, Nuxt, React, Next.js, Tailwind CSS, Flutter, Capacitor, Electron, Jetpack Compose

**IoT, Industrial & Computer Vision:** ThingsBoard, Modbus (TCP/RTU), Siemens S7 PLC, Raspberry Pi, NFC/RFID, ESP32, YOLO11/v8, PyTorch, OpenCV, MCP (Model Context Protocol)

**Linux, Network Security & Compliance:** Linux Server Management, Virtualization, Backup Solutions, pfSense, FortiGate, Active Directory / LDAP, KVKK / GDPR, 5651 (Turkish Internet Law) Compliance

**Reverse Engineering & Embedded:** ARM Cortex-M (nRF9160), Ghidra, Marlin Firmware, PlatformIO, STM32, Binary Patching

### PROFESSIONAL EXPERIENCE

#### Backend & DevOps Engineer

07/2025 - Present

Ecolarium Dijital Teknolojiler A.Ş.

Türkiye

- Designed and operated 3-node high-availability PostgreSQL clusters with streaming replication, automated backups, and query/performance tuning for production workloads.
- Managed production Kubernetes clusters (kubeadm) and authored 10+ Helm charts for application packaging, versioned releases, version upgrades, and safe rollbacks.
- Architected a multi-tenant SaaS platform for ESG/sustainability reporting (GRI / TSRS / CBAM compliance) using Django, DRF, and django-tenants, with per-tenant schema isolation supporting 30+ organization-level KPIs.
- Built and maintained Django, DRF, and FastAPI back-ends powering 5+ production platforms, including a solar energy (GES) project lifecycle ERP.
- Engineered a real-time computer-vision occupational safety (OHS) platform: RTSP camera ingestion, YOLO-based PPE and restricted-zone violation detection with SAHI sliced inference, 8 alarm types with video evidence capture, and WebRTC live monitoring with frame-accurate bounding-box overlay.
- Integrated LLM-driven Kinney risk assessment (vLLM) and geofenced vehicle analytics for municipal fleet safety, with distributed tracing (SigNoz, OpenTelemetry) across safety-critical detection pipelines.
- Implemented real-time data pipelines with Apache Kafka event streaming and Django Channels (WebSocket), processing 1,000+ telemetry events per second for live device and dashboard updates.
- Engineered Celery/Redis-based asynchronous task queues for KPI calculations, scheduled jobs, and high-volume background processing.

- Developed automated PDF reporting (WeasyPrint) and interactive Apache ECharts dashboards with 15+ chart types for executive-level analytics and compliance reports.
- Led an Oracle to PostgreSQL database migration (ora2pg) for an enterprise client, modernizing 100+ legacy tables, stored procedures, and views.
- Delivered ThingsBoard-based IoT and digital transformation projects, integrating 20+ industrial devices via Modbus-to-IoT bridges and telemetry pipelines.
- Established CI/CD pipelines (GitLab CI, GitHub Actions), container builds, and infrastructure automation across 10+ service repositories.

### Data Engineer / DevOps Engineer

07/2023 - 12/2024

EVAM

*İstanbul, Türkiye*

- Architected and managed AWS infrastructure (EC2, S3, RDS) for production data and application workloads.
- Built Jenkins CI/CD pipelines for automated build, test, and deployment of 10+ containerized services running on Kubernetes and Rancher.
- Deployed and configured Zabbix for proactive monitoring of 50+ network devices, servers, and applications with custom alerting rules and performance tracking.
- Engineered an internal automation tool over the Keycloak API to streamline identity, role, and SSO management for 40+ users across services.
- Built 5+ interactive Apache Superset dashboards and SQL-driven reports for business stakeholders.
- Designed and orchestrated 30+ Apache Airflow DAGs for complex ETL/data workflows, improving pipeline reliability and reducing manual intervention.

### Software Developer

10/2021 - 07/2023

IMAS Machinery Industry Inc.

*Konya, Türkiye*

- Built Python-based data processing and analytics pipelines for kHz-range industrial sensor data across 30+ sensor channels per machine.
- Developed end-to-end industrial automation solutions integrating PLCs and Single-Board Computers (SBCs) on the production floor.
- Implemented industrial communication layers over RPC, TCP/IP, and Modbus (RTU/TCP) protocols.
- Installed, configured, and operated ThingsBoard Server and Edge clusters for large-scale IoT deployments covering 20+ connected devices.
- Deployed and administered Apache Kafka on cloud infrastructure for real-time event streaming between machines and analytics services.
- Designed AI-powered predictive maintenance models (scikit-learn, ensemble methods) to detect anomalies and reduce unplanned machine downtime.

### Software Developer (Part-time)

12/2021 - 02/2023

Konya Science Center

*Konya, Türkiye*

- Developed multiple Augmented Reality (AR) applications used daily in interactive science exhibits by public visitors.
- Built Android mobile application front-end solutions with native UI and device-level integrations.
- Designed and implemented embedded systems and IoT projects integrating microcontrollers, sensors, and cloud back-ends.
- Administered Linux-based servers and containerized services using Docker for reliable on-site deployments.
- Optimized Android, Linux, and Windows installations on Intel NUC systems running 24/7 in public exhibits.

## PROJECTS

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### Open-Source MCP Server Suite

2025

- Author of multiple Model Context Protocol (MCP) servers that bring enterprise infrastructure under LLM-driven control: ActiveDirectoryMCP (LDAP/AD user, group, OU, and security management, 42 tools), NetOpsMCP (network diagnostics including ping, traceroute, MTR, DNS, nmap, and HTTP testing, 25+ tools), ProxmoxMCP-Extended (VM/LXC lifecycle, snapshots, storage, QEMU agent, 14 tools), and FortiGate MCP Server (firewall policies, address/service objects, VIPs, routing, VDOM support).
- Built with Python, FastMCP, Pydantic, and Docker; designed for natural-language operations from Claude, Cursor, and other MCP-compatible clients.

## TUBITAK 1711 - YZE

2022, 2023

- Contributed to two TUBITAK 1711 (Artificial Intelligence Ecosystem) funded R&D projects.

## AWARDS

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### 1st Place, ArkSigner Mobile Payment App Hackathon

2022

- Won first place with an ID card & face recognition based mobile payment application.

## EDUCATION

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### BSc, Computer Engineering

09/2020 - 06/2026

Konya Technical University

## ORGANIZATIONS

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### Founding Chairman, Konya Technical University AI & Data Science Laboratory (Ai Lab)

01/2021 - 06/2026

## LANGUAGES

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Turkish: Native English: C1 Advanced

## REFERENCES

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Mücahit Büyükyılmaz, CTO @ Ecolarium

Cemalettin Şerit, Lead Software Engineer @ Turkcell Technology

Serkan Şengönül, Data Engineer Manager @ Turkish Technology

Assoc. Prof. Dr. Sait Ali Uymaz, Konya Technical University

*Additional references available upon request.*