



SOLUTION & INTEGRATION ARCHITECT | DATA & AI LEAD
Enterprise Integration | Data Architecture | AI-Enabled Solutions

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Immediately available

PROFESSIONAL SUMMARY

Key results: 98% reduction in reported safety events from look-alike and sound-alike identifiers, with AI in production | 99.8% availability across **200+ integration points and 86 systems** | **EUR 800K** first-year savings

Solution and integration architect and Data & AI lead with 24 years in the enterprise IT of a large, transaction-intensive 24/7 organization: designed, governed and delivered an integration backbone of **200+ integration points across 86 systems (~50M annual transactions)** on Apache Kafka, IBM WebSphere MQ and REST/SOAP APIs, from core operations to SAP finance, HR/payroll and the data warehouse.

Data and AI end to end: an operational data store with canonical data model, master data management, ETL/ELT pipelines and data quality controls (~100K daily update records, eleven downstream domains), and a graph neural network system in production for an **NP-hard** Quadratic Assignment Problem.

Sustained core operations through more than eightfold growth, from 10M passengers a year in 2000 to 85M in 2024; technical due diligence for three group companies and a five-vendor RFP. A hands-on technical authority with **delivery accountability**; PMP-certified, rated **exceptional** in the DDI Manager Ready assessment.

WORK EXPERIENCE

Career Break and Professional Development | Istanbul | Sep 2024 – Present

- Planned break after 24 years with the Turkish Airlines Group, combining family time with structured upskilling: earned **AWS Certified AI Practitioner (AIF-C01)**, **Professional Scrum Product Owner I (PSPO I)** and **AWS Certified Cloud Practitioner (CLF-C02)** in 2026 and continued research on graph-based AI for safety-critical operations.

Principal Solutions Architect | Turkish Technology | Istanbul, Turkiye | Jan 2023 – Sep 2024

Official title: Distinguished Expert, the organization's highest technical grade.

- Cut reported safety events from look-alike and sound-alike identifiers by **98%** across up to ~1,500 daily operations at peak season, sustained in the years since, by replacing 2011 heuristic assignments with an in-house graph-based similarity and assignment optimization system aligned with industry safety standards.
- Reframed identifier assignment as an **NP-hard** Quadratic Assignment Problem and built a scalable solution on **Graph Neural Networks (GNN): Graph Attention Networks (GAT)** on Neo4j with PyTorch Geometric and feature engineering over phonetic, visual and semantic similarity.
- Owned roadmaps and technical direction for **six mission-critical operational systems** (1,000 users, ~100 concurrent, 5M annual transactions, EUR 1M budget), sequencing change through **integration dependency management** and architectural constraints so new capabilities did not fragment the platform landscape.
- Ran a core operations platform replacement selection (**5 vendors, 3 shortlisted, 2 POCs**) and vendor evaluation of three planning platforms through RFP/RFI, vendor management and business cases, advising VP-level leadership on build-versus-buy, technology strategy and long-term R&D strategy.
- Protected data coherence across two companies and two core systems during a group company's migration from TROYA, the group's in-house reservations and inventory platform, to a separate third-party platform, running data synchronization, cross-company schedule distribution and change management in a transition architecture.
- Established a design authority and design reviews that brought architecture decisions under ISO 27001 compliance, software quality management and enterprise architecture governance, and supported regulatory audits and compliance.
- Led an **8-person cross-functional team** (project manager, 2 system analysts, 1 business analyst, 4 software engineers) as architecture and design decision owner: defined the implementation approach, mentored engineers hands-on and cleared complex technical blockers, with Scrum Master support as required.
- Shaped integration and technology strategy for next-generation operations platforms as cross-company subject matter expert for three group companies on the core scheduling and operations platform and on operations control systems.

Senior Integration Architect

Turkish Technology

Istanbul, Türkiye

Jan 2021 – Jan 2023

Official title: Senior Expert, Integration Architect.

- Drove the enterprise integration transformation: standardized **200+ integration points across 86 systems (~50M annual transactions)** under a single integration governance and data governance model, with enterprise messaging and data streaming reference patterns adopted group-wide for interoperability, maintainability, observability and operational reliability.
- Achieved **99.8% availability**, including planned maintenance windows, for mission-critical operational platforms serving **500+ concurrent users with zero unplanned downtime**, by leading cross-functional delivery management across internal and external integration platforms through production deployment under high availability, disaster recovery design and SLA/SLO management.
- Engineered a real-time early warning system across two vendor platforms that cross-checks plans for up to **~1,500 daily peak-season operations** with hundreds of automated checks and alarms: **zero dispatches into restricted zones since go-live**.
- Extended core-platform integration with the in-house reservations platform TROYA to real-time exception and disruption management, propagating operations control decisions to reservation, inventory and customer-facing systems as they happened, so affected customers, even those already en route, could rebook online.
- Modernized the integration landscape onto an event-driven application and data integration platform on Apache Kafka (topic design, schema registry), IBM MQ and REST/SOAP APIs, sustaining **~50M annual transactions** with microservices, enterprise integration patterns, API-first design and lifecycle management, and API versioning and backward compatibility.
- Engineered the estate's reliability semantics: publish/subscribe and asynchronous processing, idempotency in consumers, retries and exponential backoff, timeouts and error recovery, dead-letter handling and poison-message processing, message ordering and durability, and replay of persisted streams for recovery.
- Owned the solution architecture artefacts that kept decisions traceable to a maintained target state architecture: solution blueprints, architecture roadmaps, High-Level and Low-Level Design (HLD/LLD), Architecture Decision Records (ADR) and non-functional requirements (NFR).
- Integrated a partner service behind an API gateway, handling API-key acquisition and token renewal on expiry.
- Set the estate's engineering practice: CI/CD architecture and DevOps release automation with Git-based (GitOps) configuration control, with automated testing strategies and performance and security testing gating releases.
- Built a real-time observability tool across all live enterprise integrations, using structured logging, correlation IDs and distributed tracing; directed delivery of Grafana dashboards, metrics and alerting to support proactive issue detection.

Lead Solutions Architect and Platform Owner

Turkish Airlines

Istanbul, Türkiye

Jun 2014 – Jan 2021

Official title: Project Manager, Flight Operations.

- Designed and built two **Tier-0** (24/7 mission-critical) operational data platforms, an operational data store and an operational plan data store, as integration layers in front of two independent vendor platforms and the authoritative **single source of truth** for enterprise reporting and downstream processing.
- Owned enterprise-wide operational data distribution for planning, operational and post-operation periods as the single integration point for **eleven downstream domains**: planning, workforce, load planning, reservation and customer-facing systems, cargo, maintenance, DWH, revenue and cost accounting, SAP finance, HR/payroll and regulatory reporting.
- Processed **~100K update records a day**, 24/7 and near-real-time, through source-to-target mappings, ETL/ELT pipelines and integration rules that consolidated, transformed and enriched every update across seasonal plans under data quality and metadata controls.
- Architected batch, near-real-time and real-time distribution patterns that absorbed **~22.5M** data changes a year (~450K annual flights, ~50 changes per flight) before fan-out to large-scale distributed data processing and analytics, with consumer-specific horizons from a **rolling three-day window to a 90-day window**.
- Fed operational changes (delays, cancellations) to customer-notification systems and operational data to loyalty and disruption hotel systems, so customer notifications, loyalty and disruption hotel arrangements ran on the same data as operations.
- Designed the operational data and integration architecture on the operational data store pattern, standardizing core operational and plan data enterprise-wide: logical data models, entities and relationships, canonical data structures, and the ESB pattern applied twice.
- Evolved both Tier-0 platforms for **ten years** (2014 – Sep 2024) as de facto product owner with final authority over feature prioritization and architectural evolution, running agile delivery in **Jira** and **Confluence**: user stories with acceptance criteria, backlog management, sprint planning and Definition of Ready/Done.
- Coordinated operational stakeholders and cross-squad dependencies for two Tier-0 platforms, carrying releases through production under ITIL-aligned **Site Reliability Engineering (SRE)** practices and continuous monitoring.
- Drove technical direction, integration landscape and platform modernization for **multimillion-euro** operational systems across planning, scheduling and operations control as lead architect, combining system and business analysis, software architecture and hands-on coding of critical components through release, operational handover and 24/7 mission-critical production under ITIL.

- Managed the vendor platform's master and reference data with the team: built and maintained the tables where users edit it and trained key users in master data management (MDM), keeping master data owned at its source.
- Built a reporting layer into both platforms on the same enriched data and fed it back into the source vendor platforms, so enterprise reporting and operations shared one version of the data.
- Coordinated the infrastructure teams' VMware-based solution as the core operations platform's product owner, keeping users working on it throughout the pandemic.

Integration Solution Design Lead

Turkish Airlines

Istanbul, Turkiye

Jan 2007 – Jun 2014

Official title: Acting Team Leader.

- Led a **6-person team** through the full lifecycle of **100+ integrations**, from requirements and system analysis to design, development, testing and documentation, harmonizing project plans across functions and tracking cross-functional milestones for every project.
- Delivered **EUR 800K** in first-year savings with a multi-currency cost reconciliation engine, launched in 2012 and built on a data pipeline of entry/exit timestamps and segment distances.
- Architected the message integration and data mapping from core planning data to the in-house reservations platform (TROYA) under industry messaging standards, keeping inventory and reservations in step with cancellations, re-timings, equipment and routing changes, reinstated services and reason codes.
- Introduced and operated a standards-based B2B data exchange platform (2007), establishing recurring data interchange with external partner organizations.
- Headed solution design and delivery for operations, workforce and planning integrations across global technology vendors, building multithreaded real-time integration frameworks (2010) and contributing to an in-house Enterprise Service Bus (ESB) on Service-Oriented Architecture (SOA).
- Developed the first heuristic similarity and assignment system (phonetic, visual and semantic similarity), delivered in 2011: the groundwork later rebuilt as the graph-based AI solution once reclassified as NP-hard.

Software and Integration Engineer

Turkish Airlines

Istanbul, Turkiye

Apr 2000 – Jan 2007

Official title: Analyst Programmer.

- Contributed to the first production implementation of a distributed vendor operations suite, the platform foundation later owned for two decades.
- Drove the technical work of the first major legacy modernization from day one as an implementation team member, moving core scheduling and operations control off the IBM mainframe (ADABAS/Natural) onto Oracle on Unix (AIX) and the vendor product family.
- Enabled two group companies to adopt the same platform, establishing the cross-company subject matter expert role.
- Designed and developed **50+ applications and integrations** from operations to DWH, SAP, MRP and core transaction platforms, an online conversion platform supporting cargo integration, and backend components in Oracle, PL/SQL, Java and C on Unix/Linux, with incident analysis and performance tuning.
- Set the calculation methodology for average passenger and baggage weights through statistical analysis of historical data.
- Cut costs by **EUR 100K** a year by designing and building the timetable publication system from scratch: worldwide schedules and partner flights in, a downloadable timetable on the corporate website out (Java, C, PL/SQL).

TECHNICAL EXPERTISE (hands-on) & CORE COMPETENCIES

Integration Architecture and Schema Governance: Event-Driven Architecture, API Architecture, reference architectures, Apache Kafka with schema registry, schema versioning and backward-compatibility rules, controlled change across event-driven integrations, IBM WebSphere MQ, Enterprise Service Bus (ESB), REST and SOAP APIs.

Data Architecture and Governance: Enterprise Data Architecture, Data Modeling, Canonical Data Model, Operational Data Store (ODS), Data Integration Architecture, Data Pipeline Architecture, master data management (MDM), data lineage through source-to-target mappings, data quality and metadata controls.

Data and AI Platform Architecture: Graph data models (Neo4j), GNN-based assignment and decision support (PyTorch, PyTorch Geometric), data pipelines, MLOps, data warehouse and BI feeds, real-time analytics.

Engineering Platforms & Languages: Oracle DB, Docker and containerization, Linux (RHEL) and Unix administration (AIX, HP-UX), application administration on Windows Server; Languages: Python, Java, C, PL/SQL, shell scripting (Bash, KSH), YAML and JSON; Git and Jenkins; UML; multithreaded real-time and database-driven systems.

Executive Leadership and Delivery: Digital transformation, transformation governance, executive (C-level) stakeholder management, PMI/PMP delivery governance, operational readiness, customer consulting and workshop facilitation.

EDUCATION

• Ph.D. (coursework)	Business Administration (Finance)	Yeditepe University	Istanbul	2002 – 2006
• M.Sc.	Management Engineering; thesis on data warehousing for mass customization	Istanbul Technical University	Istanbul	1997 – 2002
• B.Sc.	Computer Science Engineering	Istanbul University	Istanbul	1993 – 1997

LANGUAGES

• English	C1	Full Professional
• German	A2	Studying towards B1
• Turkish		Native

CERTIFICATIONS

• AWS Certified Cloud Practitioner (CLF-C02)	Amazon Web Services (AWS)	2026
• AWS Certified AI Practitioner (AIF-C01)	Amazon Web Services (AWS)	2026
• Professional Scrum Product Owner I (PSPO I), Credential ID 1347372	Scrum.org	2026
• AI and Cloud Foundations: OCI AI Foundations; Agentic AI Foundations; IBM SkillsBuild; PMI AI (CPMAI, GenAI)	Oracle, IBM, PMI	2025
• Docker Foundations Professional Certificate	Docker	2025
• Manager Ready (DDI) leadership simulation: exceptional rating	TAG Taurus Group	2024
• ITIL v3 Foundation, Credential ID 990453483		2013
• Project Management Professional (PMP), Credential ID 1225730	PMI	2008
• Lufthansa Systems SchedConnect vendor training (two weeks)	Lufthansa Systems	2007