

Jale Summak

Senior AI/ML Engineer | Data Scientist | AI Solutions Lead

Ankara, Türkiye +90 532 691 30 19 jalesummak@gmail.com

LinkedIn GitHub Hugging Face Kaggle Medium

Professional Summary

Started as a Chemical Engineer in GMP-regulated quality systems, then rebuilt a 14-year technical career around AI: within one intensive bootcamp, delivered 70+ machine learning and AI projects across 18 domains, graduated #1 out of the cohort 1.5 months ahead of schedule, and earned 3 Kaggle Bronze Medals along the way. That same drive now shows up in production: a computer-vision defect detector that cut customer complaints by 74% and lifted efficiency 7.5%, an NLP+DOE programme that cut complaints 82%, and €82K in annual savings from experiment-driven optimisation. The common thread is simple — pick up the data, find what is actually wrong, and ship something that measurably fixes it.

Key Highlights

- End-to-end ML delivery: dataset design → training → evaluation → deployment (Streamlit, Hugging Face Spaces) → monitoring and operator-facing alerting in live production environments.
- GenAI & agentic systems: designed and built RAG pipelines, domain-grounded assistants, digital twins and multi-agent workflows (LangGraph-style task separation, structured extraction, semantic matching).
- Quantified impact: 82% complaint reduction, 74% customer-complaint reduction, 7.5% efficiency gain, €82K annual savings, MAE 5.18 → 3.42 on medical imaging regression.
- Recognition: AI/Data Science bootcamp programme winner with a 70+ project portfolio and 3 Kaggle competition medals; Lean Six Sigma Green Belt.

Core Technical Competencies

Machine Learning & Deep Learning • Computer Vision & Medical Imaging • NLP, Embeddings & Semantic Search • LLMs, RAG & Multi-Agent Systems • Model Evaluation & Experiment Design (DOE) • Feature Engineering & Data Quality • Statistical Inference (SPC, MSA, ANOVA) • AI Solution Architecture & MLOps Readiness • AI Governance & Responsible AI • Executive Communication & Programme Leadership

Professional Experience

AI Solutions Lead / Senior AI Engineer & Consultant

2023 – Present

TBC Technology / TBC Tech AI | Ankara, Türkiye

- Own solution architecture and technical delivery for enterprise AI initiatives across healthcare, manufacturing, education and corporate operations.
- Design and prototype RAG and AI-agent architectures over enterprise documents and structured workflows.
- Translate ambiguous business requirements into technical roadmaps: data flows, model selection, MVP scope, integration design, evaluation criteria and risk controls.
- Advise executive stakeholders on AI governance, hallucination risk, data privacy, model limitations and responsible deployment.
- Lead cross-functional teams of engineers, analysts and external vendors from discovery through production handover.

Continuous Improvement & QA Manager — Applied AI / Data Science Lead

Aug 2022 – Jun

2026

Knauf A.Ş. | Ankara, Türkiye

- Initiated, built and deployed AI-enabled quality solutions in live manufacturing: CV defect detection, NLP feedback analytics, RAG-based operator guidance.
- Designed rigorous data-collection and measurement systems (MSA, Gage R&R, SPC, Cpk/Cpm).
- Ran designed experiments (DOE), hypothesis testing, ANOVA and regression to isolate causal drivers of quality and cost.
- Owned KPI frameworks (OEE, scrap, cycle time, complaints, process stability).

Senior Quality Assurance Specialist / Chemical Engineer

Oct 2017 – Aug 2022

MSD Pharmaceuticals | Türkiye

- Applied structured, data-driven root-cause analysis to GMP quality systems: deviations, CAPA, quality-risk management, SAP-based product release.
- Contributed to global quality programmes, internal/lead-auditor activities.
- Implemented a 5S- and barcode-based archive system improving document traceability and retrieval.

Quality Assurance Responsible / Chemical Engineer

Jan 2014 – Oct 2017

Kimetsan Chemical Mining Metallurgical Engineering | Türkiye

- Managed quality, regulatory documentation and operational coordination for chemicals in domestic and international markets.

Selected AI & Data Science Projects

Portfolio of 70+ ML/AI projects spanning: Blockchain, Classification, Clustering, Computer Vision – Face Recognition, Data Visualisation, Deep Learning, EDA & Data Acquisition, LLM/AI Agent Systems, MLOps, MLOps – Quantum Computing, Mobile App Development, NLP, Python & Pandas, Quantum Computing – Reinforcement Learning, Recommender Systems, Regression, Spark/GIS/AutoML, and Time Series. Highlights below; full portfolio available on request, Kaggle and Hugging Face.

Plasterboard Edge Defect Detection & Operator Alert System

Knauf, 2025

CNN, LLM + RAG — trained on 2,500 labelled images for real-time defect detection and severity scoring; LLM+RAG guidance layer grounded in SOP/maintenance docs. *Impact: +7.5% efficiency, –74% complaints.*

Customer Feedback Intelligence & Recipe Optimisation (Satengips)

Knauf, 2025

NLP, Topic Modelling, DOE — mined ~15 years of records; fed findings into DOE-based recipe optimisation. *Impact: –82% complaints, +3% efficiency, +4% CMII.*

Scoliosis Cobb Angle Estimation

2026

DenseNet121, Streamlit, Hugging Face — deep-learning regression on 15,999 spinal images; MAE reduced 5.18° → 3.42°; deployed on Hugging Face Spaces.

Instructor Digital Twin

2026

RAG, Embeddings — domain-grounded assistant over course materials; architecture published as a technical article.

AI CV Recruiter / CV Hunter

2026

NLP, RAG, Multi-Agent Workflow — explainable CV-evaluation and job-fit system with structured extraction and semantic matching.

EyeFriendly AI Agent

Google AI Agents Capstone, 2026

Multimodal accessibility assistant combining intent handling, visual understanding and agent behaviours.

Jetgips Base Recipe Optimisation

Knauf, 2023

DOE, Lean Six Sigma — screened ~256 formulations; 2% cost reduction, ~€82,000 annual savings.

Genetic Laboratory Information System — Product & AI Roadmap

2026

HL7, Workflow Design — 12-month architecture and product plan for a secure, auditable genetic LIS.

Technical Skills

Languages & Tooling: Python (pandas, NumPy), Jupyter, VS Code, Git/GitHub, Streamlit

Machine Learning: scikit-learn, XGBoost, LightGBM, CatBoost

Deep Learning: PyTorch, TensorFlow/Keras — CNNs, transfer learning, attention

Computer Vision: OpenCV, torchvision, HF Transformers, ViT/DETR, medical imaging

NLP & GenAI: Transformers, spaCy, NLTK, embeddings, semantic search, RAG, LLM agents, NER

Deployment & MLOps: Hugging Face Spaces, Streamlit, evaluation frameworks, human-in-the-loop validation

Statistics: Hypothesis testing, ANOVA, regression, DOE, SPC, MSA, Gage R&R, Cpk/Cpm, EWMA, CUSUM

Domain & Leadership: Industrial & healthcare AI, GMP/CAPA, Lean Six Sigma (Green Belt), MVP scoping, programme leadership

Education & Professional Development

M.Sc. Programme in AI & Data Science

Apr 2026 – Present

Rome Business School & Universidad Internacional de Valencia

B.Sc. in Chemical Engineering

2007 – 2012

Gazi University — research on nanobar synthesis & fuel cells (with Hacettepe University)

- **AI & Data Science Bootcamp** — graduated **#1 ranked participant**, 1.5 months ahead of schedule; 4-month intensive programme (2 months live weekend training + 2 months project development/presentations);

completed 70+ ML/AI projects across diverse datasets and domains; 3 Kaggle Bronze Medals; several projects deployed on Hugging Face.

- **Google & Kaggle — AI Agents Intensive / “Vibe Coding” Bootcamp** (2026) — agent design, RAG, tools, deployment, capstone project.
- **Data Scientist AI Certification** — Bootcamp track (2025–2026).
- **FlyRank AI Certificates** — Anthropic Academy & General AI Fluency track, 2026.
- **Overleaf Novice Learning Path Certificate** — LaTeX & scientific document preparation, 2026.
- Lean Six Sigma Green Belt & Minitab — SPAC A.Ş., 2023 • Python, Tableau, JMP — Build-U/Knauf, 2023.

Languages & Community

Turkish (native) • English (fluent, professional working proficiency)

Publishes technical AI/data-science articles on Medium and LinkedIn; active open-source model demos on Hugging Face.