Farrukh Nauman

AI Automation Lead | AI Business Development & Change Consultant | Principal AI Consultant | PhD

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Summary

I help organizations move from AI exploration to controlled implementation—identifying high-value automation opportunities, translating business needs into technical requirements, leading PoCs through to production, and building internal capability across business, IT, data and compliance stakeholders. Selected results:

- **Interim Team Lead**: 4–7 person DS & advanced analytics team; roadmap ownership and stakeholder steering across business, data, and platform teams.
- **De-risked platform migration**: cross-platform validation system (Databricks → Snowflake) from zero to live dashboard in ∼1 week; turned multi-day manual reconciliation into continuous automated checks.
- **50%+ cost reduction**: identified high-friction daily pipeline, redesigned with validated incremental processing (5–10× speedup) and row-level correctness proof.
- **Project Lead, ∼11M SEK Vinnova/EU portfolio**: led multi-partner sustainable-AI initiatives recognized at the EU Sustainable AI event (2023).

Current Focus

- AI automation discovery & prioritization: identifying high-friction manual workflows and scoping AI/agentic solutions.
- Change & project leadership: roadmap ownership, stakeholder steering, requirements translation, capability building.
- Governance-aware GenAI: validated, traceable AI workflows—behavioral oracles, evidence-preservation, AGENTS.md quality contracts.
- Hands-on delivery credibility: enterprise data platforms, coding agents, RAG/LLM, time-series ML.

Leadership, Delivery & Tech Stack

Leadership & Change	Interim Team Lead, Roadmap Ownership, Stakeholder Steering (business / IT / data / legal / security), Capability Building & Mentoring, Project Scoping, ROI & Business Case Analysis
AI & GenAI	AI Coding Agents (Cortex Code, Codex CLI, Claude Code), Agentic Process Automation, LLM Agents (LangChain, OpenAI SDK), RAG, Text-to-SQL, Synthetic Data, Validation Frameworks, Behavioral Oracles, Evidence-Preservation, Traceable / Audit-Friendly Workflows
Data Platforms	Snowflake, Azure Databricks, Spark, Snowpark, Azure Data Factory, SQL (advanced)
ML & Analytics	PyTorch, Time Series, Predictive Modeling, Anomaly Detection, Computer Vision
Engineering	Python (Expert, 8+ yrs), C/C++ (Proficient), Git, Docker, CI/CD, Streamlit, REST APIs, High Performance Computing
Languages	English (Fluent), Swedish (Basic), Urdu (Native)

Experience

InertialRange Labs AB - Self-employed — Linköping, Sweden
Principal AI Consultant — *Aug 2025 - Present*

Engagement: Interim Team Lead – Data Science & Advanced Analytics (Sep 2025 - Jun 2026):
Enterprise Data & AI Platform Engagement

- **Lead a 4–7 person DS/analytics team**; own roadmap, stakeholder steering, and technical direction across telemetry analytics, ML, and GenAI automation; coordinate with business owners, IT, and external partners.
- Coordinate **Databricks → Snowflake** transition planning/execution across business, data, and platform teams while keeping daily Spark/BI workloads stable on several terabytes of sensor data.
- Scoped a **cross-platform migration validation system** to de-risk the transition: automated comparison of schemas, row counts, key distributions, and date ranges across dozens of tables—from zero to live dashboard in ∼1 week. (Case study)
- Connected **Databricks and Snowflake CLIs** through autonomous coding agents (Codex CLI / Cortex Code CLI), shrinking multi-day manual migration/validation runbooks into hands-off, repeatable workflows.
- Identified a high-cost daily pipeline as a priority automation target; redesigned it to **validated incremental processing** for a 5–10× speedup with row-level correctness proof, projected to cut compute costs by **50%+**. Killed a faster but fundamentally broken alternative using multi-scale benchmarks and `EXCEPT`-based validation. (Case study)
- **Tech**: Snowflake, Databricks, Snowpark, AI Coding Agents, LLM Agents (LangChain), Streamlit, Model Monitoring.

Independent projects (separate from client engagement):

- Open-sourced **ts-agents** (PoC): autonomous time-series agent framework applied to **machine activity recognition** as an alternative to classifier-heavy workflows.
- Built a **Text-to-SQL pipeline against a production ERP** (hundreds of tables, real data): the hard parts weren't model selection but schema-aware retrieval, a semantic layer linking business vocabulary to columns and join paths, and intent-level evaluation—surfacing that valid SQL is a weak success signal when columns are half-empty or names don't match intent.
- Authored a practitioner framework for **large code migrations with AI agents**: evidence-preservation, behavioral oracles, `AGENTS.md` quality contracts. (Case study)

RISE Research Institutes of Sweden AB — Linköping, Sweden
AI Researcher & Consultant — *Jul 2021 - Aug 2025*

Project Lead: Sustainable Fashion AI Automation (2022-2025: *24 months*): Led two multi-partner initiatives: Vinnova: AI for Circular Fashion (**Project Lead**, ∼9M SEK) and CISUTAC (AI Lead, ∼2M SEK).

- **Challenge**: manual quality inspection bottleneck in circular fashion supply chain—30% inconsistency, 25% cost overhead.
- **Delivery**: scoped and led end-to-end computer-vision automation; coordinated industry partners, researchers, and end users from requirements to pilot.
- **Impact**: 40% reduction in processing time, 50%+ reduction in data collection cost via synthetic data.
- **Recognition**: 1 of 5 projects featured at the EU Sustainable AI event (2023).
- **Tech**: PyTorch, Vision Transformers, CLIP, Gradio, Docker, Synthetic Data Generation.

Low-Energy IoT Solutions (2022: *4 months*):

- Identified miniROCKET-based time-series methods as the right fit for industrial edge deployment, enabling real-time analysis at ∼90% lower hardware cost than heavier alternatives—a clear vendor/architecture decision input.

Capability Building & Mentorship:

- Established an AI mentorship program for Master's thesis students; supervised projects spanning drone edge AI, air-traffic automation, traffic analysis, and anomaly detection—building durable internal AI capability.

2MNordic IT Consulting AB — Gothenburg, Sweden
Data Scientist & Data Engineer — *Dec 2019 - Jun 2021*

Project: Early Warning System for Student Performance (2020: *6 months*):

- Translated a public-sector business need into a predictive analytics solution identifying at-risk students in 6th grade; enabled early intervention for ∼10% of the population (3,000+ students impacted).
- **Tech**: Azure DevOps, Azure Functions, Data Factory, Python, SQL, Power BI.

Project: Mathematics Assessment Optimization (2021: *4 months*):

- Analysis of digital test results across 8 schools; findings informed district-wide grading-policy adjustments—decision support delivered to non-technical stakeholders.
- **Tech**: Scikit-learn, Statistical Analysis, Python, Azure Notebooks.

Previous Research Positions — 2009–2019

- **Research Fellow, Chalmers University of Technology**: Complex systems modeling, large-scale data analysis — Gothenburg, Sweden, 2018–2019
- **Research Scientist, Niels Bohr Institute**: Simulation, forecasting, computational modeling — Copenhagen, Denmark, 2015–2018
- **Research Assistant/PhD Student, Univ. of Rochester**: Data analysis, predictive modeling — New York, USA, 2009–2015

Education & Certifications

Microsoft Certified — Azure
Azure Data Engineer Certificate — *2020*

University of Rochester — Rochester, New York (USA)
PhD in Physics and Astronomy — *Oct 2015*
Focus: Complex Systems Modeling, Data Analysis, Computational Fluid Dynamics, High Performance Computing, C/C++

Awards & Achievements

- Horton fellowship from Laboratory for Laser Energetics - full research funding award. 2010-2015
- Susumu Okubo Prize for highest performance on graduate comprehensive exam and excellence in coursework. 2011