

# Muhammad Ghufuran Akbar

M.Sc. Candidate in International  
Information Systems | Industrial AI &  
Cloud Architect



Nürnberg, BY, DE

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## Profile Overview

Aspiring Digital Industrial Strategist and M.Sc. candidate (expected 2026) with a robust foundation in Cloud Computing (GCP), Data Engineering, and Industrial AI. Proven track record at Puma Group in architecting scalable AI-driven forecasting solutions and CI/CD pipelines that bridge the gap between IT infrastructure and operational efficiency. Passionate about leveraging the Industrial Metaverse and Digital Twins to drive decarbonization in next-generation manufacturing.

## Work Experience

### Technology Stack

Python, Node.JS, GCP,  
GraphQL, SQL, Dbt,  
Airflow, VertexAI,  
BigQuery, Docker  
Playwright, Flask,  
CI/CD, Terraform

### Werkstudent - Global E-Commerce Technology

PUMA Group, Working Student

*April 2024 to Present*

- Engineered a scalable **Industrial AI forecasting** model using Google Vertex AI. Enhanced **Demand Planning accuracy by 25%**, directly supporting **inventory optimization** and **Supply Chain Resilience**.
- Accelerated Cloud Transformation by architecting automated **CI/CD pipelines (Terraform, Docker)**. Established a foundation for **Software-Defined Operations** capable of supporting scalable Edge Computing architectures..
- Orchestrated the creation of a **Digital Thread** by integrating 20+ heterogeneous systems (SAP S/4HANA, SFCC). Eliminated data silos to enable Real-Time Visibility across the global value chain.
- Guaranteed high-quality global rollouts by building an automated testing suite **(Playwright/Python) achieving a 100% UAT success rate**.
- Developed a full-stack global reporting tool on **GCP**, automating data aggregation to provide regional leadership with a **single source of truth for real time decision making**.

### Technology Stack

Java Quarkus, Docker,  
Typescript, Javascript,  
APIs, MySQL, IBM  
Watson Studio

### Analyst - Software and Information Systems

Bank AL Habib Limited

*August 2022 to September 2023*

- Led the **Brownfield Modernization** of legacy infrastructure by refactoring monolithic architectures into scalable Microservices. Reduced deployment cycles by 30%, demonstrating core competencies for **Industrial Digital Transformation**.
- Delivered robust full-stack applications by developing secure **APIs** and responsive front-ends **(TypeScript/JavaScript)** connected to **SQL** databases.
- Enabled data-driven decision-making by delivering advanced analytics with **IBM Watson Studio**, improving reporting efficiency by 50%.

### Technology Stack

Google Analytics 4,  
Adobe XD, Figma,  
Web Scraping,  
PowerBI

### Specialist - Platform Development

Thrifle Technologies, Startup Based in USA

*September 2021 to July 2022*

- Enabled data-informed product decisions by analyzing user behavior with **Google Analytics 4** and creating actionable dashboards in **PowerBI**.
- Translated business requirements into a clear development roadmap by designing user centric wireframes and prototypes in **Figma** and **Adobe XD**.
- Supported go-to-market readiness by using **web scraping** techniques to gather competitive intelligence and inform product strategy.

## Projects

### Core Technology

Python (Pandas, NumPy, Scikit-learn), Machine Learning, ELT Pipelines, Data Analysis

### IoT Enabled Digital Shadow for Logistics (with Munich Airport - EuroTrade)

- Designed an **Industrial IoT (IIoT)** analytics pipeline to process 500,000+ semi-structured sensor logs. Engineered a Digital Shadow of conveyor belt operations to reconstruct timestamped box journeys.
- Developed **Anomaly Detection** models that identified 3,000+ operational delays and localized systemic bottlenecks at merge zones, enabling a shift from reactive fixes to **Data-Driven Condition Monitoring**.

### Core Technology

Agentic AI, LLM, RAG, Deep Learning, Python, Streamlit, NLP, Docker

### Agentic AI & LLM Based Analytics Platform

- Architected a **Multi-Agent System** (using Gemini & RAG) that autonomously executes data analysis tasks. Orchestrated a "Research Agent" for context gathering and an "Analysis Agent" for statistical reasoning
- Demonstrated the future of **Industrial Copilots** by enabling natural language queries to generate real-time visualizations (Plotly/D3.js), reducing the "Time-to-Insight" for non-technical stakeholders.

### Core Technology

Machine Learning, Airflow, Dbt, PostgreSQL, XGBoost, Prophet, Data Engineering, SimPy, Python, Supply Chain Optimization

### Intelligent Supply Chain Digital Twin

- Engineered an end-to-end **Supply Chain Digital Twin** combining **Discrete-Event Simulation (SimPy)** and **Causal Inference (OLS)** to model network dynamics and optimize safety stock levels under uncertainty.
- Orchestrated automated pipelines (**Airflow, dbt**) feeding 8 production-grade ML models. Deployed **XGBoost** for delivery delay prediction (with **SHAP** for explainability) and **Prophet** for demand planning, fully containerized via **Docker** for scalable deployment.

## Education History

### Master of Science in International Information Systems

Institution: *Friedrich-Alexander-Universität Erlangen-Nürnberg*

- Current Grade: 2.5 (Gut)*
- International Experience: Successfully integrated into the German academic system while working full-time in global teams (English/German)*

*Year of Graduation: 2026*

### Bachelor of Science in Engineering Science

Institution: *Ghulam Ishaq Khan Institute of Engineering Sciences & Technology*

*Year of Graduation: 2022*

- Gold Medallist
- Dean's Honor Role in 5 out of 8 Semesters
- Grade: 1.60 ( German Equivalent)

## Certifications

- Data Science Professional Certificate**, IBM
- Elements of Artificial Intelligence**, University of Helsinki
- DevOps Fundamental**, EdYoda Digital University
- Transforming Data into Information using Power BI**, Supply Chain Talks

## Languages

- English** (C1)
- German** (B1) - In Progress
- Urdu** (Native)

Digital Signature:

*Muhammad Ghufraan Akbar*