Muhammad Ghufran Akbar

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Solving problem statements with **AI and full-stack solutions**, I **build systems** that make operations smarter and workflows smoother. From unifying **global platforms** to **deploying IoT and ML** tools, I turn data into **actionable solutions**.

EDUCATION

Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) — Nuremberg, DE
M.Sc in International Information Systems — Oct 2024 - Sept 2026

Ghulam Ishaq Khan Institute of Science & Technology (GIKI) — Topi, PK
B.Sc in Engineering Sciences; **Gold Medallist** — Aug 2018 - July 2022

WORK EXPERIENCE

PUMA GROUP — Herzogenaurach, BY, DE
Global Ecommerce Engineering - Working Student — Apr 2024 – Present
- Unified the **Order Management System (OMS)** across 5 regions, integrating ERP, SFCC, payment gateways, carriers, and warehouses via **GQL APIs**.
- Migrated cloud to **GCP**, cutting vendor costs and deploying a **GenAI chatbot** that reduced support tickets by 40%.
- Built **Flask + Node.js reporting tools** on GCP with load balancer and **Playwright/Python automated testing scripts** for OMS
- Delivered omnichannel features (Click & Collect, Endless Aisle) with **98% UAT success** across global rollouts.
- Developed an **AI-driven order projection tool** using **Vertex AI, Python, Pandas, Scikit-learn** to improve forecasting and inventory planning.
- **Tech Stack:** GCP, Vertex AI, Flask, Node.js, REST & GraphQL APIs, Python, Docker, Playwright, Jira, Confluence.

BANK AL HABIB LIMITED — Karachi, PK
Software Architect & Developer — Aug 2022 – Sep 2023
- Modernized the legacy banking system by designing a new **microservices-based architecture** using **Java Quarkus**, leading to a **30%** reduction in deployment time and improved system scalability; actively contributed to service orchestration and performance optimization.
- Built and maintained full-stack applications using **ASP.NET Core**, **Vue.js with TypeScript**, and **Next.js**, while developing RESTful APIs for internal and external services to ensure secure, efficient system communication across the consumer banking ecosystem.
- Delivered analytical reports and dashboards using **IBM Cognos** and **Power BI**, streamlining non-financial transaction analysis and improving reporting efficiency by **40%**, supporting strategic decisions with data-driven insights.

THRIFLE TECHNOLOGIES (start up led by 3 people based in USA) — Remote
Business Development Specialist — Aug 2021 – July 2022
- Defined KPIs and performed user behavior analysis using **Google Analytics** to support data-informed product decisions.
- Created **wireframes** for platform development and wrote product descriptions to support UI/UX design and go-to-market readiness.

PROJECTS

IOT-BASED AIRPORT LOGISTICS DATA ANALYTICS & ML PLATFORM
- Designed **end-to-end Python pipeline** to extract, clean, and timestamp **semi-structured log data** from **airport AKL systems**.
- Tracked complete box journeys to generate **actionable datasets** for **operational analysis**.
- Built **ML models** to **identify failure points** and **predict delays**, uncovering **3,000+ potential disruptions**.
- Diagnosed **conveyor idle times** as key bottlenecks, enabling **predictive maintenance** and **workflow optimization**.
- Delivered **real-time visibility** across provisioning operations, improving **efficiency** and reducing **downtime**.

SUPER RESOLUTION USING HYPERSPECTRAL IMAGING AND ATTENTION BASED CNN
- Developed a **deep learning framework** to **2× spatial resolution** of hyperspectral images while retaining 90%+ spectral similarity for improved ore classification.
- Built **attention-based CNN** to fuse **low-res HSI (100×100×240) with high-res MSI (400×400×3)**, boosting PSNR by ~4 dB over bicubic interpolation.
- Preprocessed and analyzed 250+ HSI cubes using Python and MATLAB, **optimizing pipelines** for better model generalization.
- Secured **2nd** place among 20+ projects, delivering a low-cost **ML super-resolution** prototype for **TerraCore's mining operations**.

FINANCIAL ANALYSIS FOR NEW MANUFACTURING UNIT
- Simulated **1,000+ Monte Carlo scenarios** using **NPV, perpetuity, and pricing contract models** to evaluate 10-year financial viability for setting up a new manufacturing unit.
- Identified a **75% likelihood of positive NPV**, highlighting profitability under varying cost and revenue assumptions to guide investment decisions.
- Designed an interactive **Power BI dashboard** with pivot tables to visualize simulation results, breakeven timelines, and risk sensitivity for executive stakeholders.

ACHIEVEMENTS & SKILLS

Technical Skills: C++, C#, Vue.js, Python, BigQuery, Database & SQL, Java Quarkus, React, Express JS, Node JS, TensorFlow, GQL, Arduino
Software: MATLAB, Simulink, PowerBI, Tableau, GCP, Jira, Confluence, Adobe Photoshop & Illustrator, Proteus, Solid Works, Neo4J
Certifications & Training: Data Science Professional Certificate (IBM), Data into Information using PowerBI (SCT)
Awards: Gold Medallist; **1st** in BAHL IT Trainee Program; **Dean's Honor Roll** in 5 semesters;
Languages: English(C1), **German**(A2), **Urdu** (Native)