

# Waleed Hassan

Mohalla Khudrian Wala District Tank, KPK, Pakistan · (+92) 346-5273892 · cadetwaleedhassan@gmail.com

· [LinkedIn](https://www.linkedin.com/in/waleed-hassan-091804279/) : <https://www.linkedin.com/in/waleed-hassan-091804279/>

· [Portfolio](https://portfolio-waleed-hassan.netlify.app/) : <https://portfolio-waleed-hassan.netlify.app/>

---

## EXPERIENCE

May 2024-Present **DATA ANALYST** **STEPUP SOL, ISLAMABAD, Pakistan**

### *Data Analyst Using Different Tools Like Power BI, Tableau, Excel, Python, SQL*

- Analyzed large datasets using SQL, Python (Pandas, NumPy, Seaborn, Matplotlib), and Excel, generating actionable insights that increased decision-making efficiency by 30%.
- Designed and implemented data visualization dashboards in Power BI, enhancing executive reporting processes and reducing report generation time by 50%.
- Collaborated with cross-functional teams to streamline ETL processes, improving data quality and reducing processing time by 25%.
- Collaborate with cross-functional teams to ensure data accuracy and completeness.

Mar 2026- Present **AI ASSISTANT TRAINER** **KPITB (KHYBER PAKHTUNKHWA IT BOARD)**

- Structured training sessions on Artificial Intelligence and Machine Learning, covering core concepts and real-world applications.
- Mentored and supervised student teams on AI-based projects, providing technical guidance on model development and implementation.
- Assisted students in applying machine learning and Generative AI concepts to practical use cases.
- Designed and explained key topics including NLP, data preprocessing, and model evaluation techniques.
- Provided hands-on support in project development, debugging, and performance optimization.

Feb 2026- April 2026 **BUSINESS ANALYST** **TURING, UNITED STATES**

- Performed side-by-side (SxS) evaluations on GHD outputs to assess response quality, accuracy, relevance, and consistency.
- Conducted detailed fact-checking and validation to identify inaccuracies, inconsistencies, and unsupported claims.
- Prepared clear, evidence-based justifications to support evaluation outcomes and maintain high review quality.
- Applied established evaluation guidelines, scoring frameworks, and quality standards across all assessment tasks.
- Utilized browser-based tools, extensions, and research methods to support analysis and review workflows.
- Executed basic command-line operations to assist with evaluation processes and data handling tasks.
- Documented findings, summarized insights, and communicated key observations effectively to stakeholders and team members.

January 2024 - June 2024 **DATA ANALYST** **INFINITY BITS, Islamabad, Pakistan**

### *Data Analyst*

- Utilized SQL, Python (Pandas, NumPy), and Power BI to extract, clean, and transform large datasets from various sources.
  - Developed predictive models using machine learning techniques to forecast future trends and optimize decision-making processes.
  - Performed statistical analysis (e.g., hypothesis testing, correlation analysis) to uncover meaningful patterns and trends.
- 

## EDUCATION

2022-2026 **UNIVERSITY OF ENGINEERING AND TECHNOLOGY MARDAN** **Mardan, KPK, Pakistan**

### *Bachelor's in computer science (Specialization in Data Science); Major in Data Science*

- Awards: Merit Based Scholarship (only 2 awarded to class)
- Awards: Selected In Dean's Award List 2023-2024, 2024-2025, 2025-2026 (Appreciation Certificate) (Only 5 awarded to class)
- Awards: Got Prime Minister Laptop (Only 1 awarded to class)
- Achievement: Selected as a Member of **BOS (Board of Studies)**
- Assistant: Collaborated With Teacher to Help In their Routines, Lectures and Labs
- CGPA: 3.96 / 4.00

---

## PROJECTS

### POWER BI AI AGENT

- Developed an intelligent AI-powered agent that bridges the gap between business users and Power BI data by converting natural language questions into DAX queries.
- The automatic visualization generation with AI-powered chart metadata creates publication-ready graphics without manual configuration.
- By leveraging cutting-edge LLMs (OpenAI GPT-4 and Groq LLaMA-3.3-70B), the system achieves 95% DAX query accuracy with sub-2 second response times, enabling natural language interaction with Power BI datasets.
- Built a conversational interface allowing users to query dashboards and retrieve insights without manual filtering or DAX queries.
- Leveraged Large Language Models (LLMs) to interpret user queries and generate contextual, data-driven responses.
- Implemented prompt engineering techniques to convert user questions into analytical insights and summaries.
- Enabled automated insight generation, including trend analysis, KPI summaries, and data explanations.
- Designed a system to bridge business intelligence (BI) and Generative AI, improving accessibility for non-technical users.
- Enhanced decision-making by transforming static dashboards into interactive AI-driven analytics systems.

### AI-POWERED DOCTOR APPOINTMENT MANAGEMENT SYSTEM (WHATSAPP + GEMINI AI)

- Developed an AI-powered appointment management system enabling patients to book and manage doctor visits via WhatsApp.
- Integrated Google Gemini LLM to handle natural language conversations for appointment scheduling and queries.
- Built an automated workflow using n8n to orchestrate interactions between WhatsApp, AI model, and database.
- Designed conversational flows to capture patient details, preferred time slots, and doctor availability.
- Stored and managed appointment data using Google Sheets for real-time updates and tracking.
- Implemented prompt engineering techniques to ensure accurate intent recognition and structured data extraction.
- Automated confirmations and responses, reducing manual scheduling effort and improving user experience.
- Enabled scalable, low-code AI system design for real-world healthcare automation.

### PDF Q&A CHATBOT

- Developed an AI-powered PDF Question-Answering chatbot leveraging **Large Language Models (LLMs)** and Retrieval-Augmented Generation (RAG).
- Built a document processing pipeline to extract, chunk, and embed PDF content for semantic understanding.
- Implemented vector search using embedding techniques to retrieve contextually relevant information from documents.
- Integrated LLM APIs (e.g., GPT) to generate accurate, context-aware responses based on retrieved document chunks.
- Designed and optimized **prompt engineering strategies** to reduce hallucinations and improve answer precision.
- Enabled real-time user interaction through an intuitive web interface (Streamlit/Flask).
- Improved information retrieval efficiency compared to traditional keyword-based search systems.

### ENHANCED Q&A CHATBOT WITH GROQ & LANGCHAIN

- Developed an enhanced conversational Q&A chatbot using Groq-powered LLMs integrated with LangChain for efficient workflow orchestration.
- Designed and implemented prompt engineering strategies to improve response relevance, structure, and contextual understanding.
- Built multi-turn conversation capability using LangChain to maintain context across user interactions.
- Integrated Groq API for low-latency, high-performance inference, significantly improving response speed.
- Utilized LangChain chains and components to modularize LLM pipelines for scalable and maintainable architecture.
- Implemented dynamic query handling and response generation for diverse user inputs.

### SQL CHATBOT

- Developed an AI-powered SQL chatbot that translates natural language queries into executable SQL using Large Language Models (LLMs).
- Built a Text-to-SQL pipeline enabling users to interact with relational databases without writing SQL code.
- Integrated LLM APIs to dynamically generate optimized SQL queries based on user intent.
- Implemented database schema understanding to improve query accuracy and contextual relevance.
- Designed prompt engineering strategies to ensure correct query generation and reduce logical errors.
- Enabled real-time query execution and returned structured results in a user-friendly format.
- Improved accessibility of database insights for non-technical users by automating complex query generation.

## HR ANALYTICS DASHBOARD

- Designed and developed an interactive HR Analytics Dashboard in Power BI
- Conducted comprehensive data analysis to track and visualize key HR metrics such as Number of employees, Employees Count by Department, Salary by Department, and performance trends.
- Built intuitive visualizations, including clustered bar charts, line graphs, and slicers, to enhance data storytelling and user experience.

## SALES ANALYTICS DASHBOARD

- Developed a comprehensive Power BI sales analytics solution that consolidates data from multiple sources to provide actionable insights across sales performance, customer segmentation, inventory management, and marketing campaign effectiveness.
- Designed a star schema data model with 9 interconnected tables to support comprehensive sales analytics.
- Published dashboard to Power BI Service with optimized performance and data governance.
- Complete visibility into sales performance with \$53.38M total revenue tracking, 72K units sold, and drill-down capabilities from high-level KPIs to individual transaction details.
- Comprehensive marketing analytics tracking campaign performance, budget utilization, ROI calculation, and conversion metrics.
- Track return rates (0.08 overall) by product, reason, and time period to identify quality issues and improve product satisfaction.

## SOCIAL MEDIA ANALYTICS DASHBOARD

- Developed a comprehensive Power BI dashboard to monitor and analyze social media performance across Facebook, Instagram, LinkedIn, and Twitter.
- The dashboard provides real-time insights into follower growth, engagement metrics, content performance, and demographic data to drive data-informed social media strategies.
- Designed a star schema data model with 5 main tables to efficiently organize social media data.
- Published to Power BI Service with public access for stakeholder viewing.

## HEALTHCARE DATA WAREHOUSE & BUSINESS INTELLIGENCE

- Designed and implemented a comprehensive healthcare Business Intelligence solution from the ground up, covering the entire data lifecycle: operational database design (OLTP), ETL pipeline development, dimensional data warehouse architecture, OLAP cube creation, and interactive dashboard visualization.
- End-to-end Business Intelligence solution covering patient care, department operations, medication management, nurse workload, and appointment scheduling with full traceability from source to dashboard.
- Used Star schema design with 6-dimension tables and 5 fact tables.

## **HANDLING MISSING VALUES**

- Completed a data cleaning project on athlete's event data (having 271,116 records) using Python and the Pandas library, focusing on detecting and managing missing data effectively.
- Utilized essential Pandas functions like `isnull()`, `dropna()`, and `fillna()` to clean the dataset, preparing it for deeper analysis.
- Identified null values, calculated missing data percentages, removed a column with over 50% missing values and implemented advanced imputation techniques to improve dataset quality and reliability.

## **Advanced SQL with Sakila Database**

- Developed advanced SQL queries to analyze the Sakila Database, simulating a video rental store, and extracted actionable insights from complex datasets.
- Identifying rental trends, customer preferences, actor-film associations, Filtering data based on specific conditions (e.g., genres, rental dates, and customer demographics), Identifying rentals returned within 24 hours.

---

## **OTHER**

- Languages: Urdu (native), English (intermediate)
- Technical Skills: Python, Excel, Power BI, Tableau, SQL, Microsoft Fabric, Big Data, Data Analysis, Data Import/Export, Data Manipulation, Data Transformation, Data Visualization, Data Visualization Software, Interactive Data Visualization, Data Wrangling, Exploratory Data Analysis (EDA), Web Scraping, Dashboard Development, Plotly, Generative AI, Data Literacy, Model Evaluation, Supervised Learning, Unsupervised Learning, Jupyter Notebook, Docker, LLM ( Large Language Model ) , Fine Tuning
- Soft Skills: Problem Solving, Excellent Communication, Project Management, Data Presentation, Data Storytelling
- Certifications: [IBM Data Analyst \(19 July 2024\)](https://coursera.org/share/54dd1ab1fe5e1242fb79264bd9294379) : <https://coursera.org/share/54dd1ab1fe5e1242fb79264bd9294379>