

SOBIA KHANAM

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SUMMARY

Data Analyst with 2 years of experience in transforming complex data into actionable insights that drive strategic decisions. Proven track record in building scalable data pipelines, performing advanced geospatial and statistical analysis, and deploying analytical solutions to support real-time decision-making. Proficient in Python, SQL, Relational Database, and GIS with demonstrated success in delivering impactful insights for public sector marine operations. Adept at working with cross-functional teams in agile environments, with a strong commitment to data integrity, business impact, and continuous learning.

SKILLS

- Programming Languages: Python, SQL
- Frameworks: Pandas, NumPy, Scikit-Learn, Matplotlib
- Tools: MS Excel, MS PowerPoint, MS Word, Power BI, PostgreSQL, QGIS, Django ORM, Postman
- Platforms: Google Colab, PyCharm, GitHub
- Other: REST APIs, KPIs, Back-End Web Applications, Front-End Interaction, ETL Pipelines, Statistical Analysis

WORK EXPERIENCE

Naval Research and Development Institute (NRDI)

Research Officer

Jul 2023 – Feb 2025

Research Assistant

May 2023 – Jul 2023

- Collaborated with a cross-functional team to develop and maintain the back end of a scalable Data Analysis and Decision Support System (**DADSS – A project of Maritime Security Agency**) using Python (Django) and PostgreSQL, reducing report generation time by 75%.
- Designed and tested REST APIs for real-time data access and analytics, with automated unit and integration tests ensuring reliable software performance and reducing bugs in production.
- Developed automated test plans and scripts to validate API endpoints and backend functionality, using Python and manual testing workflows for faster iterations and improved code stability.
- Led the spatial analysis of vessel and port data using QGIS, including DBSCAN clustering and temporal analysis to detect fishing hotspots and traffic patterns, directly supporting marine surveillance and planning.
- Built and optimized data pipelines by implementing ETL workflows, automating ingestion from heterogeneous sources (CSV, spatial datasets, live vessel feeds), increasing data accuracy by 60% and reducing processing time by 40%.
- Created interactive geospatial visualizations (heatmaps, trajectory maps, port activity charts) using QGIS and Python to support decision-making for maritime enforcement units.
- Assisted in the deployment and performance tuning of PostgreSQL databases for marine data warehousing, improving query performance and data accessibility by over 20%.
- Actively participated in agile sprint planning, contributing user-focused enhancements and bug fixes based on stakeholder feedback and usage metrics.
- Authored technical documentation and contributed to internal tutorials on using QGIS, data pipelines, and API endpoints for non-technical stakeholders.
- Participated in weekly team meetings, providing data-driven insights for informed project planning and execution, enhancing team efficiency and project outcomes.

Pak Elektron Limited (PEL)

Sales Intern

Jul 2022 – Aug 2022

- Engaged in B2B technical sales support for power equipment, contributing to a 10% increase in client engagement through tailored outreach and consultative selling.

KPMG International Limited

Data Analytics Consulting Virtual Intern

Jun 2022

- Addressed real-world analytics challenges including data quality evaluation and customer segmentation using Power BI and Excel dashboards, driving strategic business insights.

Techrotics Technologies Lab (TTL)

Project Management Intern

Sep 2021 – Dec 2021

- Planned, organized, and directed the completion of projects while ensuring that the projects are on time, within budget and scope.
- Projects: AI-Based Pick and Place Robot for Object Detection and Tracking Powered by Jetson Nano | IoT-Based Coal Mine Disaster Management Robot Powered by Raspberry Pi

EDUCATION

National University of Sciences and Technology (NUST)

Karachi, Pakistan

Bachelor of Engineering, Electrical Engineering | CGPA: 3.83/4.0

Sep 2019 – Jun 2023

Relevant Coursework: AI & Decision Support System, Machine Learning, Probability & Statistics, Computer Vision, Digital Signal Processing, Embedded System Designs, Linear Control Systems, Industrial Electronics, Power Electronics

Final Year Project: Development of an indigenous EEG Data Acquisition System and Convolutional Neural Network with Multi-Headed Attention Based Deep Learning Model for Detection and Classification of Epilepsy and its various types.

COURSES AND CERTIFICATES

- Google Data Analytics Professional Certificate – [*Issued by Google on Coursera*](#) *Jul 2024*
- Django Application Development with SQL and Databases – [*Issued by IBM on Coursera*](#) *Jan 2024*

PUBLICATION

- “IoT Based Smart Power Quality Monitoring and Electricity Theft Detection System”, 2021 IEEE 16th International Conference on Emerging Technologies (ICET)

ACTIVITIES AND LEADERSHIP

NUST Robotics and Artificial Intelligence Society

Founder and President

Jan 2022 – Dec 2022

- Founded the first-ever Robotics and AI Society at NUST to provide hands-on training and skill development opportunities for 80+ AI and robotics enthusiasts through workshops and sessions.
- Technical Achievements: AI Chatbot, Line Following Robot, Obstacle Avoiding Robot, Fire Fighting Robot, Remote Controlled Robot

Women Engineers Pakistan (WEP)

Campus Ambassador

Apr 2021 – Jan 2022

- Organized a virtual STEM Outreach Program for 200+ young female students across Pakistan, empowering them to overcome stereotypes and embrace their potential in STEM fields.

United Nations Association of Pakistan (UNAP)

Youth Member

Jan 2021 – Jan 2022

- Volunteered 15 hours/month at UNAP to contribute to the human and economic development in Pakistan.
- Actively participated in UNAP's "De Kar Haasil" campaign during Ramadan, assisting in fundraising efforts aimed at providing food and educational resources to underprivileged communities.

ACHIEVEMENTS

- Led a team of four to **1st Runner-Up** in SiMERGE - a national case study and simulation competition by KSBL & Engro Corporation, Pakistan
- Secured **2nd position** among 25+ teams in the All-Pakistan Robo Fiesta Competition at HITEC University, Taxila, Pakistan
- Earned **NUST High Achiever Award 2022**