

HIRA TOHEED BUTT

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Education

NUST University

Nov. 2021 – May. 2025

Bachelor of Science in Software Engineering

Islamabad

Enhanced professional skills, expanded industry knowledge, and fostered meaningful connections through hands-on involvement in projects and collaborative activities.

Relevant Coursework

- | | | | |
|------------------------|------------------------|-------------------------|--------------------|
| • Data Structures | • OOP (JAVA) | • Software Construction | Engineering |
| • Algorithm Analysis | • Machine Learning | • Software Design and | • Software Project |
| • Internet of Things | • Deep Learning | Analysis | Management |
| • Information Security | • Computer forensics | • Software Quality | |
| • Database Management | • Software Engineering | | |

Work History

Junior AI/ML Engineer Intern – Brackets

July 2025 – Present

- Polishing and expanding existing skills by working on the development, evaluation, and optimization of machine learning and deep learning models. Gaining hands-on experience in data preparation, feature engineering, and integrating AI solutions into production environments.

SimPark: An Agent-based Vehicle Parking Framework for Smart Cities

Aug 2022 - Sep 2022

- The research aimed to develop a smart parking system using JAVA and OOP to minimize vehicle roaming, reduce parking search time, and ease traffic congestion. This system would optimize parking management, promoting convenience, sustainability, and eco-friendliness in urban transportation.

Publication: Conference: FIT, Status: Published

Projects

Crime Detection and Classification | *Python*

- Developed deep learning model for crime detection and classification from video footage, utilizing ConvLSTM2D networks. Achieved effective classification of activities, highlighting the potential for real-time applications despite data and computational constraints.

AI Text Detection using BERT | *Python*

- Implemented Fine-tuned BERT model to classify AI-generated vs. human-written text

Decision Tree Analysis | *Python*

- Incorporated decision tree-based ML models for credit risk assessment, enhancing performance via boosting techniques. Analyzed accuracy, time, and space complexities, evaluating trade-offs and comparing various algorithms and modifications.

Sales Insights Dashboard Project | *Data Analyst Role*

- Conducted sales data analysis using SQL and implemented ETL workflows in Power BI to prepare and model data across multiple tables (Market, Product, Customer, Transactions). Designed a dynamic Power BI dashboard showcasing key metrics such as revenue trends, product performance, and customer behavior to support strategic decision-making.

Technical Skills

Languages: Python, Java, C, HTML/CSS, JavaScript, PHP, SQL

Developer Tools: VS Code, Eclipse, MySQL, MongoDB, Kaggle, Colab

Technologies/Frameworks: Linux, GitHub, JUnit

Leadership / Extracurricular

Event head at Palestine Relief Fair

- Led the Palestine Relief Fair at NUST, organizing stalls, activities, and vendors for a centralized event supporting Gaza through Alkhidmat, showcasing my leadership and organizational abilities for a good cause, successfully raising a donation of 200,000 PKR.

Head Girl at School

- Served as the Head Girl at my school, taking on responsibilities and leadership roles, representing my peers and fostering a positive school environment.