

Waseela

@ waseela6670@gmail.com |  LinkedIn |  GitHub |  Karachi, Pakistan

EDUCATION

NED University of Engineering & Technology
B.E. in Computer System ; CGPA: 3.36/4.0

Karachi, Pakistan
Aug 2020 – Sep 2024

Qamar-e-Bani Hashim Higher Secondary School
F.Sc. in Pre-Engineering; Score: 88%

Karachi, Pakistan
Sep 2018 – Jun 2020

SKILLS

Languages: Python, SQL, MySQL, Bash, C lang, C++, JavaScript

Technologies/Frameworks: TensorFlow, Matplotlib, Numpy, Pandas, PyTorch, Seaborn

Tools: L^AT_EX, Vivado, Matlab, Jupyter, Git, GitHub, Linux, XAMPP, Tableau

INTERESTS

Genetics and the structure of DNA, Theoretical concepts in space-time and time travel, High-Performance Computing, Astrophysics and cosmology, Robotics, Numerical Methods, Machine Learning, Neuroscience

EXPERIENCE

NED University of Engineering & Technology
Programming Instructor

Karachi, Pakistan
Dec 2024 – Present

- Teaching Data Science, Python programming, and web development under a Sindh government-funded initiative, delivering hands-on exercises and real-world projects.
- I mentor students in implementing industry-relevant solutions, fostering strong programming, problem-solving, and analytical skills.

NED University of Engineering & Technology
Research Assistant

Karachi, Pakistan
Sep 2024 – May 2025

- Supported research activities including literature review, data analysis, hardware design, LLM implementation, and documentation.
- Gained hands-on experience with Verilog, Vivado, and MATLAB in a collaborative research environment.

Invisions Solutions
AI/Ml Intern

Karachi, Pakistan
Jul 2024 – Aug 2024

- Enhanced a pet medical website's doctor chatbot by implementing symptom and diagnosis extraction, chat summarization, and medicine suggestions using SciSpacy.
- Developed a recommendation engine to suggest similar products based on user interactions and browsing behavior.

Neurocomputation Lab of NCAI
ML Intern

Karachi, Pakistan
March 2023 – May 2023

- Applied machine learning techniques for dynamic 6G resource allocation in cellular networks, improving efficiency and optimizing resource utilization.
- Enhanced network performance and user experience, contributing to advancements in next-generation communication systems.

SELECTED PUBLICATIONS

An Efficient and Flexible FPGA-Based Deep Neural Network Accelerator.

Signal Processing Systems
March 2025

- Designed a modular FPGA accelerator for CNNs, achieving 50% resource reduction and up to 40x improvement in efficiency over conventional DSP-based designs.
- Scaled architecture to deliver 144 GOPS and 480 FPS with low power usage, enabling high-performance AI deployment on edge devices.
- Utilized bit-packing methods and achieved parallel multiplication within a single DSP slice to enhance multiplication efficiency in FPGA architectures.

Advancing Low-Resource Language Speech Synthesis: A VITS-Based Urdu TTS System.

Language Resources and Evaluation

Aug 2025

- Developed and fine-tuned a VITS-based TTS model for Urdu, training on a custom dataset to achieve high-quality text-to-speech synthesis.
- Marked a significant step forward in low-resource language processing.

RELEVANT COURSEWORK

Computer Vision, Artificial Intelligence, Machine Learning, Applied Physics, Calculus, Probability & Statistics, Linear Algebra & Ordinary Differential Equations, Complex Variables & Fourier Analysis, Numerical Methods, Data Structures & Algorithms, Computer Architecture, Computer Communication Networks, Distributed Computing, Discrete Structures, Signals and Systems, Computer Organization & Design, Digital Signal Processing, Digital System Design, Distributed Computing, Microprocessor Based System Design, Circuit Theory, Operating Systems, Software Engineering, Database Management Systems

PROJECTS

THARAPY AI- AN AI POWERED TOOL FOR EMPHATIC SUPPORT AND SELFCARE PLANS |

Falcon LLM, Flutter, Machine Learning, Python Django, Fire Base

- Developed an AI-powered tool providing empathetic support and personalized self-care plans using NLP techniques for mental health assistance.
- Integrated sentiment analysis and keyword-based severity detection to tailor recommendations and enhance user well-being.

Connect4 - AI Game | Python, AI minimax algorithms.

- Develop a two-player game in which user can play with an AI player. The algorithm helps the AI to maximize its output while minimizing the player's output.

Weather Prediction Using ML | ML Algos, Numpy, Matplotlib, Pandas

- Develop a weather prediction system using machine learning algorithms to forecast weather conditions based on user-provided input values like temperature, humidity, wind speed, etc.

The Resume Builder | React JS, HTML, CSS, JDK, My SQL

- Created revolutionizing resume writing by offering an intuitive web app for personalized, professionally formatted resumes. The user can download the PDF resume.

CERTIFICATES

IELTS Academic

Dec 2025

Overall Band Score: 6.5

Generative AI with Large Language Models - DeepLearning.AI & AWS

Oct 2024

Gained knowledge of generative AI concepts, prompt engineering, and LLM integration into applications.

SQL - DataCamp

Aug 2023

Learned data extraction, filtering, aggregation, and manipulation techniques using SQL for database management and analysis.

Introduction to Computer Vision and Image Processing – IBM

Feb 2023

Learned fundamental computer vision concepts, image processing techniques, and practical applications.

Supervised and Unsupervised Learning – Coursera

Aug 2022

Covered machine learning fundamentals, model training, evaluation, and clustering techniques.

EXTRA CURRICULAR ACTIVITIES

- Served as an active member and student lead in academic WIE society, organizing workshops, competitions, and community engagement activities.
- Engaged in technical and creative competitions, including writing contests and innovation challenges, to promote problem-solving and teamwork skills
- Participated in international-level hackathons, programming contests.

REFERENCES

Available upon request