

## Summary

A highly motivated and detail-oriented Computer Engineering student at COMSATS University Islamabad, Lahore Campus. Skilled in various programming languages and hands-on experience in developing web-based platforms, mobile applications, and system applications. Strong leadership abilities demonstrated through volunteer work and event management. Eager to apply programming expertise and analytical thinking to innovative projects while continuously learning and growing.

## Education

<b>BS Computer Engineering</b> (since 2022):	<b>Expected Graduation: 2026</b>
COMSATS University Islamabad, Lahore Campus.	
<b>ICS: Kinnaird College for Women (KCW), Lahore</b>	<b>2020 - 2022</b>
<b>Matric: Garrison Academy for Girls, Lahore Cantt</b>	<b>2018 – 2022</b>
<b>Online Mindstorm: Summer Gamejam</b>	<b>2024</b>
<b>Online DevQuest: Canva Graphic Designing</b>	<b>2024</b>

## Projects and Research Papers

### Dry-Port Management System (C++, Procedural Programming)

- Built a Dry Port Management System in C++ using procedural programming concepts.
- Included modules for cargo handling, shipment scheduling, and client record management.
- Used file handling for data storage and retrieval.

### Memory Allocation Visualizer (Python, GUI)

2025

- Developed a Python-based GUI tool using Tkinter to demonstrate memory allocation techniques like First Fit, Best Fit, and Worst Fit.
- Enabled interactive user input and real-time visualization for better conceptual understanding.
- Applied operating system memory management principles in a practical, educational context.

### Pet Mobile Application (Flutter, Mobile App Development)

2024

- Developed a cross-platform mobile app using Flutter to manage pet profiles, health records, shop for food/accessories, and book vet appointments.
- Integrated features for browsing products, adding to cart, and scheduling doctor visits with date/time selection.
- Designed a clean, responsive UI using Material Design for smooth navigation and user-friendly interaction.

### Pharmacy Management System (C++, OOP)

2023

- Built a pharmacy management system in C++ leveraging Object-Oriented Programming (OOP) techniques.
- Utilized encapsulation, inheritance, and polymorphism to create a modular and maintainable code structure.
- Developed classes for handling medicine inventory, customer details, and transaction processing.

### Qatar Airways Management System (React, Express.js)

2023

- Developed an airplane management system using React for the frontend and Express.js for the backend.
- Implemented features for flight scheduling, aircraft details, and crew assignments.
- Managed data flow through RESTful APIs, with version-controlled source code on [GitHub](#).

## Research Papers:

### Artificial Intelligence in Networking

AI for Network Optimization: Dynamic bandwidth allocation, routing, and congestion control.

Self-healing Networks: Networks that detect and fix issues autonomously.

AI-based Traffic Prediction: Using deep learning for real-time network traffic forecasting.

### Security and Privacy in Networks

AI-driven Cybersecurity: Using machine learning to detect and mitigate network threats in real-time.

Zero Trust Networks: Ensuring secure authentication for every entity in the network.

Quantum Cryptography: Using quantum key distribution (QKD) for ultra-secure communications.

## Volunteer Work and Experience

<b>Arbisoft:</b> Took part in Mock Interviews.	2024
<b>Fruitful Foundation Intern for Welfare:</b> Assisted in welfare initiatives.	2024 - 2025
<b>CDC Director of Fashion Designing:</b> Team Head of fashion design.	2023
<b>Welfare Work For NGO</b> (Kar-E-Kamal)	2023

### Language and Technologies

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English; Urdu; French  
Visual Studio; GitHub; GitLab; Zrok; Altera Quartus; Proteus; AutoCAD; Jupyter Notebook; Wireshark; Cisco Packet Tracer;  
MATLAB; GNU/Linux; Android Studio; Embedded C/C++; Python; Firebase; Supabase; PostgreSQL; Office 365

### Skills & Interests

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Programming (C++, C, Java, JavaScript, HTML, CSS, React JS, Dart, Express JS, Flutter, SQL Server)  
Graphic Designing  
Leadership  
Python and AI concepts  
Team Management (Teamwork)