

# Roha Arslan

**Software Engineer | AI & Full-Stack Development**

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## Education

**COMSATS University Islamabad, Lahore Campus**

Bachelor of Science in Software Engineering | CGPA: 3.29/4.0 (German Grade: 2.0) | July 2025

**Relevant Coursework:** Machine Learning, Artificial Intelligence, Computer Vision, Data Structures and Algorithms, Database Systems, Object-Oriented Programming, Data Warehousing and Mining, Numerical Computing, Statistics and Probability Theory, Multivariable Calculus, Operating Systems, Computer Networks

**Kinnaird College for Women, Lahore**

Intermediate in Computer Science | Grade: A | July 2021

**Divisional Public School, Lahore**

Matriculation | Grade: A | July 2019

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## Professional Experience

**DWP Group, Lahore**

**Trainee Software Engineer (Full-time Contract) | May 2025 – Present**

- Developed full-stack enterprise applications for AI-powered and multi-tenant products, including frontend, backend, and RESTful API integration
- Tested and debugged complex workflows, ensuring smooth user experience and reliable system performance
- Created technical documentation, prototypes, and flowcharts for multi-tenant HR application features
- Implemented responsive UI/UX enhancements using React and CSS frameworks
- Researched and integrated third-party APIs to extend application capabilities

**Tech Cynosure, Remote**

**Junior Python Developer | December 2024 – May 2025**

- Built modular AI voice assistant for hotel management with online/offline modes, adaptable for kiosks and smart terminals
- Designed dynamic API engine with centralized brain configuration to avoid hardcoded logic and support flexible workflows

- Integrated multiple lightweight LLMs (GPT-2, GPT-Neo, BLOOM) and tested for speed, accuracy, and structured output (JSON)
- Implemented AIML fallback for basic offline interactions and ensured persistent user intent handling in multi-step conversations
- Enabled natural voice interaction using faster-whisper (speech-to-text) and eSpeak (text-to-speech)
- Developed API synchronization tool connecting QuickBooks Online and OrderTime platforms for automated data flow
- Built backend endpoints with custom service layers, polling workers, and job schedulers for real-time data synchronization
- Integrated financial workflows by syncing payment details from QuickBooks to OrderTime

## **SKMCH&RC, Lahore**

### **Biomedical Engineering Intern** | July 2024 (1 month)

- Gained hands-on experience with medical equipment including ECG machines, patient monitors, and diagnostic modules
- Performed analysis, calibration, and validation of medical devices
- Worked on customized temperature and humidity monitoring device

## **Upwork/Local Clients, Lahore**

### **Freelance Technical Writer** | May 2023 – March 2025

- Produced high-quality technical articles on Machine Learning, AI, and software engineering topics for diverse clients
- Crafted engaging content making complex technical concepts accessible to broad audiences
- Demonstrated SEO optimization skills for improved visibility and reach
- Conducted in-depth research ensuring accuracy and value, collaborating with editors to maintain publication standards

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## **Leadership and Extracurricular Activities**

### **Google Developer Student Club (GDSC), COMSATS University**

Deputy Director - Content Writing | October 2022 – February 2023

- Led content strategy and managed team producing technical and educational articles
- Mentored writers, promoted tech literacy, and encouraged engagement with emerging technologies

### **COMSATS Lahore Debating Society**

Media and Publications Officer | April 2023 – July 2024

- Managed digital presence through website, newsletter, and social media content
  - Designed event marketing materials, increasing workshop participation and audience reach
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# Projects

## AROUQ Blood Donation App

**Technologies:** React Native, Redux, Firebase, Google Maps API, MongoDB, JWT Authentication

- Developed full-stack mobile application connecting blood donors and recipients in real-time
- Implemented location-based donor matching, JWT authentication, and real-time notifications
- Created in-app chat feature for seamless coordination between donors and recipients
- Proposed extensions including hospital integration, emergency alerts, and iOS optimization

## Neo4j-Backed Conversational Chatbot

**Technologies:** Python, Neo4j, LangChain, RAG

- Built intelligent chatbot leveraging knowledge graphs for context-aware conversations
- Implemented Retrieval-Augmented Generation (RAG) pipeline using LangChain
- Designed graph data model with Cypher queries for efficient relationship traversal

## Additional Projects

- **Handwritten Digit Recognizer** (Python, TensorFlow) – CNN achieving 97% accuracy on MNIST dataset
- **Hospital Management System** (Java, MySQL, Figma) – Patient registration, appointments, and billing
- **Pacman Reflex-Based Agent** (Python) – AI agent using reflex-based decision making
- **Practice Responsive Web Application** (React, CSS, JavaScript) – Multi-page responsive website
- **Simpletron Simulator** (C) – Assembly-like language simulator

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## Certifications

- **n8n No-Code AI Agent Builder** – Simplilearn (January 2026)  
Workflow automation, API integration, multi-step workflows, Docker-based self-hosting
  - **Machine Learning, AI & Data Science** – Kamyab Jawan Programme (August 2025)
  - **Build a Neo4j-Backed Chatbot using Python** – Neo4j (April 2025)  
Knowledge graphs, Neo4j Python driver, LangChain, RAG, LLM-powered systems
  - **Cypher Fundamentals** – Neo4j (April 2025)
  - **Neo4j Fundamentals** – Neo4j (May 2024)
  - **Responsive Web Design** – freeCodeCamp (November 2023)
  - **Certificate of Recognition** – L'Oréal Brandstorm Competition (January 2025)
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## Technical Skills

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<b>Programming Languages</b>	Python, JavaScript, Java, C, C++, SQL
<b>Web Technologies</b>	React, Node.js, Django, HTML, CSS, RESTful APIs
<b>AI/ML Frameworks</b>	TensorFlow, LangChain, RAG, LLMs (GPT-2, GPT-Neo, BLOOM)
<b>Databases</b>	Neo4j, MySQL, MongoDB, Firebase
<b>Tools &amp; Platforms</b>	n8n, Docker, Git, Figma, Balsamiq
<b>Specializations</b>	Workflow Automation, API Integration, Knowledge Graphs, Cypher Query Language, Graph Data Modeling, Full-Stack Development
<b>Concepts</b>	Data Structures & Algorithms, OOP, Operating Systems, Machine Learning, Artificial Intelligence, Computer Vision

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## Languages

- **English:** Fluent (IELTS Academic Overall 8.0 – Listening 9.0, Reading 8.5, Writing 7.0, Speaking 7.0)
- **Urdu:** Native
- **German:** Basic (A1 level)

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## Additional Information

- **Academic Credits:** 133 ECTS-equivalent credits in Computer Science and Software Engineering
- **Uni-Assist Grade Conversion:** German Grade 2.0 (on 1.0-4.0 scale)
- **Key Strengths:** Full-stack development, AI/ML integration, API design, technical documentation, cross-functional collaboration
- **Interests:** Artificial Intelligence, Natural Language Processing, Knowledge Graphs, Automation, Graph Databases