

ALI AKBAR

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OBJECTIVE

Seeking a backend or systems engineering internship where I can contribute to building reliable and scalable software while strengthening my foundation in systems design, software architecture, and performance-focused development.

EDUCATION

Bachelor of Software Engineering, National University of Sciences & Technology 2024 – 2028

GPA: 3.54 / 4.00

Relevant Coursework Data Structures and Algorithms, Object-Oriented Programming, Discrete Mathematics, Linear Algebra, Database Systems, Operating Systems

SKILLS

Programming Languages	Java, C/C++, Javascript, SQL
Framework and Technologies	React, Spring Boot, JavaFX, Swing
Tools & Platforms	Git, Linux, Vercel, Maven, AGI STK

EXPERIENCE

Chinese SBAS Internship September 2025 - November 2025

[NASTP Alpha Tower, Islamabad, Pakistan]

Worked on software development for a Chinese Satellite-Based Augmentation System (SBAS) project. Contributed to system-level development and supported engineering tasks related to satellite navigation and positioning systems. Collaborated with team members on technical implementation and system integration.

Teaching Intern June 2025 - August 2025

[Explore Valley Schools Pakpattan, Pakistan]

Assisted students with programming fundamentals and problem-solving. Helped debug code and supported technical learning sessions.

Office Management Trainee March 2016 - April 2017

[Punjab Skills Vocational Council, Pakistan]

Completed practical training in office management, working with Microsoft Word, Excel, and PowerPoint. Gained experience in documentation and administrative workflows.

PROJECTS

CubeSat Remote Sensing Mission Simulation (APSCO CubeSat Competition)

Contributing to a CubeSat mission as part of the APSCO CubeSat competition, focused on remote sensing and imaging of Baltoro, Biafo, and Siachen glaciers. Designed and simulated the CubeSat mission using AGI STK, configuring onboard sensors including camera, magnetometer, sun sensor, and Earth horizon sensor. Performed coverage analysis and mission planning for optimal glacier imaging. Additionally contributing to ground station development using Yamcs for telemetry and mission operations. [Demo Video](#)

Technologies: AGI STK, Satellite Simulation, Remote Sensing, CubeSat Systems

Arxiv Search Engine Stellar Trace

Developed a search engine using Arxiv metadata with a C++ backend implementing Google-like search and ranking logic. Designed a React frontend with an interactive 3D planetary interface using Three.js for visual exploration of research papers. [Demo Video](#) — [Frontend Repository](#) — [Backend Repository](#)

Technologies: C++, React, Three.js, JavaScript

Brain F Interpreter RISC-V Compiler (C++)

Developed an interpreter and compiler for the Brain F programming language, including parsing logic and execution engine. Implemented compilation targeting RISC-V architecture to explore low-level system design. [Demo Video](#) — [Github Repository](#)

Technologies: C++, Compiler Design, Systems Programming

AI Wardrobe Manager (Java Swing)

Developed a desktop application that analyzes wardrobe items and suggests outfit combinations. Implemented UI and logic for managing clothing items and generating recommendations. [Demo Video](#) — [Github Repository](#)

Technologies: Java, Swing

FutureLens (Financial & Economic Trend Prediction System)

Designed and developed a multi-domain prediction system to forecast financial and economic trends including stock markets, cryptocurrency volatility, interest rates, energy consumption, and population growth. Implemented statistical prediction models and built a WinForms-based interface for data visualization and interaction. [Demo Video](#) — [Github Repository](#)

Technologies: C++, WinForms, CSV Data Processing

QR Scanner Pro (JavaFX)

Built a JavaFX desktop application for scanning QR codes from webcam and image files. Implemented real-time scanning and link detection. [Demo Video](#) — [Github Repository](#)

Technologies: Java, JavaFX, ZXing

PROBLEM SOLVING

Actively practicing data structures and algorithms through LeetCode and competitive programming, focusing on algorithmic thinking and efficient problem solving. [LeetCode Profile](#)

ACHIEVEMENTS

- Global Nominee (**NASA** Space Apps Challenge)
- Participation (**Harvard** Health Hackathon)
- Community Service Internship (Alkhidmat Foundation)
- Teaching Internship Certificate

TECHNICAL INTERESTS

- Systems Programming
- Compilers
- Backend Development
- Desktop Applications
- Space Systems Simulation

ADDITIONAL SKILLS

- AGI STK (Satellite Simulation)
- Technical Documentation
- Team Collaboration