

Lakshay Chauhan

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EDUCATION

Indraprastha Institute of Information Technology (IIIT) Delhi

Jul 2021 – Jun 2025

Bachelor of Technology in Computer Science and Engineering

Delhi, India

WORK EXPERIENCE

Member of Technical Staff

Jul 2025 – Present

ZL Technologies, Inc | [Website](#)

Hyderabad, India

- Contributed to the development of ZLUA, a core component of ZL Tech's unified cloud-native data governance platform, used by Fortune 500 enterprises to manage unstructured data at scale.
- Designed and implemented backend features using Java, C#, JSP, and XML, integrating with Apache Tomcat, Maven, Tika, and Ant for deployment and content processing.

Research Assistant | [GitLab Project Organization](#)

May 2024 – May 2025

Networks and Systems Security Lab - IIITD | [Website](#)

Delhi, India

- Objective:** Address quality degradation in video streaming applications when fallback from QUIC to TCP occurs due to UDP blocking.
- Solution:** Implemented a mechanism to send notifications in QUIC packets to anticipate UDP blocking. Server logs the kernel congestion window state to be used in the upcoming TCP connection. Improved user experience by avoiding TCP slow start, thus preventing buffering during fallback.

PROJECTS

Minimal Compiler Infrastructure | [Repository](#)

May 2024 – Present

- Key Skills:** *Compiler Infrastructure, Design and Optimization, Rust, FASM, WASM, Graphviz*
- Developed a minimal compiler infrastructure inspired by LLVM. It converts source code into an optimized control flow graph (CFG) and translates it into target-specific assembly code.
- Implemented CFG optimization passes, such as identifier validation, constant folding, and CFG simplification, ensuring high-performance code generation.

Immediate-Mode GUI Framework | [Repository](#)

Feb 2024 – May 2024

- Key Skills:** *C/C++, Graphics Programming, Systems Programming, UI Frameworks, Rendering Pipelines*
- Designed and implemented a lightweight immediate-mode GUI framework from scratch using a low-level graphics library. Built a real-time rendering loop, input/event handling system, and modular UI components with minimal abstraction overhead.
- Focused on performance, explicit state management, and predictable memory usage for interactive applications.

Needham Schroeder Based PDF Print Server | [Repository](#)

Mar 2025 – May 2025

- Key Skills:** *C/C++, Networking, Cryptography, Client-Server Systems, Security Protocols*
- Implemented a secure client-server print service using the Needham-Schroeder authentication protocol. Designed custom request/response messaging and session validation to prevent unauthorized access. Gained hands-on experience with low-level networking, protocol correctness, and security-aware systems design.

TECHNICAL SKILLS

Languages: C, C++, Rust, Assembly, Java, Kotlin, JavaScript, Python, Bash, Haskell

Frameworks: PyTorch, Django, ReactJS, Numpy, Pandas, Tauri, LibGDX, Raylib

Developer Tools: Emacs, Linux, Git, GDB, Markdown, Google Cloud Platform, OpenLiteSpeed, SQLite3

Technical Electives: Data Structures & Algorithms, Operating Systems, Cryptography, Database Management, Computer Security, Computer Networks, Compilers, Machine Learning, Natural Language Processing

AWARDS

Awarded **Summer Undergraduate Research Fellowship** in 2023 by IRD-IIITD for the project “*Utilizing ultrasonic distance sensors as a mapping tool to design user-friendly CST*”.

Awarded **CHANAKYA Fellowship** by iHub Anubhuti Foundation in 2024 for the project “*A Unified Approach to User Emotion Detection through Emojis and Textual Analysis*”.