

# Achyut Anand Pandey

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## EDUCATION

### Graphic Era Deemed to be University

Bachelor of Technology in Computer Science and Engineering; CGPA: 8.3

### Central Board of Secondary Education (Class XII)

Higher Secondary; Percentage: 80.2%

Dehradun, India

July 2022 – July 2026

Dehradun, India

2022

## PROJECTS

### IoT IV Fluid Monitoring System | C++, IoT, Sensors, ESP32

July 2025

- Engineered an integrated **hardware-software solution** to automate IV fluid monitoring, aligning with **digital integration** principles to solve real-world healthcare challenges.
- Developed efficient firmware logic using **C++** on the **ESP32** board to process sensor data and trigger real-time alerts, successfully reducing the need for manual oversight by approximately 40%.
- Secured **2nd Runner-Up** at an International Hackathon (500+ teams) for **innovation**, technical feasibility, and effective system design.

### Custom Pseudo-Code Compiler | Python, SLY, Automata Theory

May 2025

- Built a custom compiler using **Python** and the **SLY** library to translate simplified pseudocode into executable Python code.
- Implemented **Lexical Analysis** (Tokenization) and **Syntax Analysis** (Parsing) to validate code structure and execution logic.
- Designed the tool to lower the entry barrier for new programmers, demonstrating **innovation** and a user-centric approach.

### Real-Time Lane Detection System | Python, OpenCV, Computer Vision

Aug 2024

- Developed a perception module using **OpenCV** to detect road lanes in video feeds, simulating autonomous vehicle navigation logic.
- Implemented an advanced image processing pipeline using **Canny Edge Detection** and **Hough Transforms** to filter noise and extract structural features accurately.
- Optimized the algorithm to process video frames in real-time, demonstrating proficiency in **Python** and algorithmic efficiency.

### Text Summarization with NLP | Python, Machine Learning, spaCy

Jan 2025

- Created an AI-driven tool using **Python** libraries to generate concise summaries from large text documents, utilizing both extractive and abstractive methods.
- Showcased capability in **contemporary technologies** and delivering tech-led solutions for business transformation.

## TECHNICAL SKILLS

**Languages:** C++, Python, C, Java, SQL, JavaScript

**Libraries & Frameworks:** OpenCV, spaCy, SLY (Parser), Pandas, NumPy

**Developer Tools:** Git, Docker, AWS (Cloud), VS Code, ESP32 (IoT)

**CS Fundamentals:** Data Structures & Algorithms, OOP, Operating Systems, Compiler Design, DBMS

**Soft Skills:** Problem Solving, Critical Thinking, Collaboration, Adaptability, Verbal Communication

## ACHIEVEMENTS & CERTIFICATIONS

**AWS Certified Cloud Practitioner:** Acquired foundational knowledge of cloud concepts, security, and technology.

**Hackathon Finalist:** Finalist at **Amazon HackOn** (National Level) for designing a novel software solution for logistics.

**Data Structures & Algorithms:** Solved **200+** problems across LeetCode, Coding Ninjas, & TUF; honed problem-solving skills.

**Salesforce Agentforce Specialist:** Demonstrated mastery in CRM automation and AI-driven solutions.

**International Hackathon Winner:** Secured 2nd Runner-Up position globally among 500+ teams for IoT innovation.