

# Sagar Dubey

Backend Developer | Python Developer

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## Summary

Backend-focused **Python Developer** with expertise in building secure, scalable web applications using **Flask** and **Django**. Proficient in designing optimized schemas for relational databases like **PostgreSQL** and **MySQL**. Experienced in deploying RESTful APIs on **AWS** infrastructure with **Docker** containerization. Strong foundation in **Data Structures** and performance optimization, dedicated to delivering production-grade backend systems.

## Education

**PES College of Engineering** *B.Tech in Computer Science Engineering*  
CGPA: 7.45

**Aug 2022 – Jul 2026**

## Experience

**KP Sales Corporation** *Backend Development Intern*

**May 2025 – Oct 2025**

- Developed a Flask-based Inventory System managing **200+ SKUs**, reducing manual stock entry errors by **40%** via automated validation logic.
- Optimized SQL queries for real-time product tracking, decreasing report generation time by **60%** for cross-departmental operations.

## Projects

**Smart Classroom and Timetable Scheduler** *Python, Flask, Docker, SQLite*

**Jan 2025 – Present**

- Engineered a **Dockerized** scheduling engine using a multi-pass heuristic algorithm, reducing timetable generation time by **90%** for 50+ faculty members.
- Solved **100% of hard constraints** (room allocation, faculty availability) while optimizing soft constraints like workload balance.
- Implemented RBAC and secure session management to handle CRUD operations for **5+ core academic entities**.

**Text-to-Speech Chrome Extension** *JavaScript, Web Speech API*

**Jan 2025 – Mar 2025**

- Developed an accessibility extension to convert page content to speech; published in **IJRTI (Vol. 10, Issue 8, Aug 2025)**.
- Integrated configurable voice controls (pitch, rate) achieving **sub-100ms latency** for real-time text processing.

**Flask-Based Chatbot (ByteBuddy)** *Python, Flask, SQLite, NLP*

**May 2024 – Jul 2024**

- Developed a self-learning chatbot using NLP similarity matching to dynamically adapt responses based on user interactions.
- Managed **1,000+ stored conversations** with optimized database indexing for instant retrieval.

## Skills

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

**Frameworks:** Flask, Django, Bootstrap

**Databases:** SQLite, MySQL

**Backend:** RESTful APIs, JWT Authentication, Session Management, API Integration, Web Scraping

**Cloud & DevOps:** AWS (EC2, S3, IAM, Auto Scaling, Load Balancer, Cloud Architecture), Docker

**Tools:** Git, GitHub, VS Code, PyCharm

**Core Concepts:** Data Structures, Algorithms, Web Security, Authentication, CRUD Operations

## Certifications

- 100 Days of Code: The Complete Python Pro Bootcamp – Udemy (Aug 2025).
- AWS Academy Graduate – Cloud Foundations (Sep 2024) and Cloud Architecting (Jul 2025).
- GitHub Foundations – Collaboration, project boards, and repository security (Valid till Apr 2028).
- AI/ML for Geodata Analysis – IIRS/ISRO (Nov 2024).
- Certificate in Programming (C, C++, Java, Python) – Disha Computer Institute.

## Achievements

- Solved **200+ algorithmic problems** across multiple programming languages.
- Delivered a production-grade academic automation platform as part of B.Tech coursework.
- Active contributor to backend-focused open-source repositories on GitHub.