

AMAN GUPTA

SOFTWARE ENGINEER

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[GitHub](#) | [LinkedIn](#) | [Portfolio](#) | [LeetCode](#)

SUMMARY

Bachelor of Technology in Computer Science and Engineering (Data Science) student (SGPA 9.55) with a strong foundation in Data Structures & Algorithms, concurrency, and end-to-end software development across Java, Python, and AI/ML. Built scalable backend services, REST APIs, real-time intelligent systems and SQL data warehouse solutions. Open-source contributor with merged pull requests to widely used repositories. Comfortable across the stack — from system design and databases to machine learning deployment. Seeking 2026 Software Development Engineer (SDE) opportunities.

TECHNICAL SKILLS

Languages: Java, Python, SQL

Frameworks & Backend: REST APIs, Flask, Multithreading, OOP

ML / Data: TensorFlow, PyTorch, OpenCV, pandas, NumPy, Matplotlib, Scikit-Learn, NLP

Core CS: Data Structures & Algorithms, System Design, DBMS, Operating Systems, Computer Networks

Databases: MySQL, MongoDB

Tools: Git, GitHub, Maven, Open Source, Android Studio

PROJECTS

TaskForge — Distributed Job Scheduling Engine | Java, DSA, Concurrency, DAG

- Designing a job scheduler that models task dependencies as a **DAG** and **executes them in topological order** using a **thread pool**, with cycle detection and automatic retries.
- Applied **topological sort, graph traversal, and Java concurrency** primitives for thread-safe parallel execution.

SmartRoute Navigator — Adaptive City Graph Engine | Java, Spring Boot, Graphs

- Built a real-time navigation engine using **Dijkstra, A*, and K-Shortest-Path algorithms** over dynamically weighted city graphs.
- Designed **RESTful APIs with Spring Boot** and a modular backend architecture for traffic-aware route queries.

SQL Data Analytics & Warehouse | MySQL (T-SQL)

- Designed a **star-schema** data warehouse and implemented **14+** modular SQL scripts using **CTEs, window functions, and aggregate queries** to perform EDA, KPI reporting, Customer/Product 360 analytics, segmentation, and performance analysis.

ROAR — Robust Learning-Augmented Routing Engine | Python, ML, A*, Graph Algorithms

- Designed a **robust A* routing** framework that blends admissible graph heuristics **with ML-predicted travel times** via a tunable trust parameter, guaranteeing bounded worst-case route degradation under corrupted or adversarial predictions.
- Built and evaluated the system on a **real 32K-node Los Angeles road network** with real sensor traffic data; verified the safety guarantee held across **7,200+ adversarial test** cases with zero violations, benchmarked against **classical Dijkstra/A* baselines**.

OPEN SOURCE CONTRIBUTIONS

- **TheAlgorithms/Java** — Merged code/bug-fix pull requests to one of GitHub's most-starred algorithm repositories.
- **Fossology** — Merged open-source contributions.

WORK EXPERIENCE

Data Science Intern | RD-Infro-Technology

Jan – Mar 2025

- Developed ML pipelines in Python for fraud detection, forecasting, classification, and time-series analysis.
- Shipped four end-to-end projects with documented, version-controlled code on GitHub.

Android App Developer | CodSoft

Jun – Jul 2025

- Built Android apps in Java (Quiz App, To-Do List) using Android Studio with focus on functionality and UI/UX.

EDUCATION

Bachelor of Technology in Computer Science and Engineering (Data Science) — Jain University — SGPA: 9.55 | 2023 – 2027

CERTIFICATIONS & ACHIEVEMENTS

- Google Crowdsourcing Influencer — earned Influencer badge for contributing to Google's AI/ML datasets (image, text)
- Algorithms for Searching, Sorting & Indexing; Introduction to Operating Systems — Coursera.
- Data Science 101 — IBM SkillsBuild; Power BI Data Visualization Workshop.