

Aviral Singh

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PROFESSIONAL SUMMARY

Motivated first-year B.Tech Computer Science student with a strong foundation in data structures, algorithms, and object-oriented programming. Passionate about building scalable software systems and IoT-integrated applications. Eager to apply technical skills and a problem-solving mindset to real-world engineering challenges through internships and open-source contributions.

EDUCATION

KIET Deemed to be University, Ghaziabad, U.P. Expected May 2029

Bachelor of Technology in Computer Science & Engineering | CGPA: [8.6 / 10.00]

Relevant Coursework: Data Structures & Algorithms, Discrete Mathematics, Applied Physics, OOP, Database Management, Computer Networks

TECHNICAL SKILLS

Programming Languages: C, Python, JavaScript, HTML5, CSS3

Databases: MySQL

Tools & Technologies: Git, GitHub, VS Code, Arduino IDE, Render

Hardware / IoT: ESP8266, Arduino Uno, HC-SR04, MAX30102, NodeMCU

Core CS Subjects: Data Structures & Algorithms, OOP, DBMS, Operating Systems, Computer Networks, Discrete Mathematics

PROJECTS

AquaSol — Solar-Powered UV-C Water Purifier | IoT, ESP8266, Hardware Prototyping, Pitch Deck

- Designed and prototyped a solar-powered UV-C water purification system targeting rural communities with limited clean-water access.
- Built a 5-member cross-functional team; led documentation, pitch deck creation, and speaker script for NIDHI-PRAYAS grant application.
- Integrated sensor-based contamination monitoring and automated UV-C activation to reduce manual intervention by ~80%.

PulseSync — Real-Time Pulse Oximeter Web Monitor | ESP8266, MAX30102, C++, JavaScript, WebServer

- Built a standalone ESP8266 web server to stream real-time SpO2 and heart-rate readings from a MAX30102 sensor to a browser dashboard.
- Resolved critical memory constraints by migrating from Blynk to a self-hosted HTTP server, reducing firmware memory footprint by ~40%.
- Implemented responsive frontend with live chart updates using vanilla JavaScript, enabling zero-app monitoring from any device on LAN.

Smart Car Parking Monitor | ESP8266, HC-SR04, Node.js, WebSockets, Render

- Developed an IoT-based multi-floor parking occupancy monitor using ultrasonic sensors and ESP8266 microcontrollers.
- Achieved sub-500ms live occupancy updates across all parking levels via persistent WebSocket connections.

ACHIEVEMENTS & AWARDS

- Solved 10+ problems on LeetCode / GeeksforGeeks (DSA) with focus on arrays, linked lists, trees, and dynamic programming.

EXTRACURRICULAR ACTIVITIES

- Actively participated in group communication and presentation activities as part of college coursework, developing professional storytelling and public speaking skills.
- Contributed to [Open-Source Project / GSSoC Program]: submitted [X] pull requests addressing [feature/bug], merged into main codebase.
- [Any sport, cultural activity, NSS/NCC, or other relevant extracurricular.]