

# Sahil Kumar

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## Education

**Deenbandhu Chhotu Ram University Of Science And Technology**

2023 – Present

*Bachelor of Technology in ECE – CGPA: 6.7/10*

*Murthal, Sonipat*

**CBSE - 12**

2022

*Mathematics - Grade: 89.2%*

*New Delhi*

## Projects

**Line Follower Robot** | *Arduino Nano, 8 IR Sensor Array*

March 2025

- Engineered a Line Follower robot utilizing an Arduino Nano, an 8-IR sensor array and L298N motor driver for precise path detection.
- Implemented PID control algorithms to negotiate 90° corners and dynamic track variations, ensuring stable navigation.
- Addressed challenges in sensor calibration and PID tuning, optimizing performance under diverse operating conditions.

**Multi-Terrain Gripper Bot** — *ESC, FS-i6 Transmitter/Receiver*

November 2024

- Designed and built a multi-terrain robotic gripper capable of navigating diverse surfaces.
- Integrated an FS-i6 transmitter and receiver for remote control and an ESC for precise motor control.
- Engineered a custom gripping mechanism using a servo motor and a self-designed gripper.
- Overcame significant hardware and mechanical challenges, refining problem-solving skills in embedded systems.

**Gesture LED** | *Python, OpenCV, Arduino Nano*

November 2024

- Developed a hand gesture-controlled LED array using OpenCV for gesture recognition and Arduino Nano for hardware control.
- Designed the system to light up LEDs in the same pattern as the fingers detected by the camera, showcasing real-time responsiveness.
- Overcame challenges in learning Python and OpenCV from scratch, refining both programming and debugging skills to deliver the project successfully.

## Experience

**Robotics Club Member and Mentor**

October 2023 – Present

*TH!NKBOTS, DCRUST, Murthal*

*Murthal, Haryana*

- Developed and implemented robotics projects, including a Line Follower bot and a Multi-Terrain Gripper bot.
- Mentored junior members on robotics fundamentals, focusing on Arduino programming, sensor integration, and project development.
- Collaborated with a team to troubleshoot and optimize robotics systems, fostering a hands-on learning environment.

## Extracurricular Activities

**Member, Robotics and Aeromodelling Club**

October 2023 – Present

*TH!NKBOTS, DCRUST, Murthal*

*Murthal, Haryana*

- Contributed to robotics projects and mentored juniors on robotics fundamentals and aeromodelling.

## Technical Skills

**Languages:** Java, C/C++, HTML, CSS, Javascript, Python, SQL

**Developer Tools:** Git, VS Code, IntelliJ, Arduino IDE

**Other Tools:** Linux