

SHUBHAYU BASAK

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PROFESSIONAL SUMMARY

Third-year Electronics and Communication Engineering student with a strong foundation in VLSI design, semiconductor devices, and embedded systems. Proficient in HDL programming, logic design, and simulation tools, with a strong interest in advanced chip architecture, low-power design techniques, and innovation in electronics.

SKILLS

- **Programming & Scripting:** Python, C, C++, Java, MATLAB, Verilog
- **Computer Science Fundamentals:** Data Structures & Algorithms, OOP, Artificial Intelligence, Machine Learning
- **Hardware & IoT:** Arduino Uno, ESP32, Wireless Modules (Wi-Fi), Circuit Analysis, Signal Processing
- **Electronics & Circuit Design:** Digital Circuit Design, Oscillators, Embedded Systems, PCB Basics
- **Tools:** Proteus, LTSpice, Xilinx Vivado, Tinkercad, MATLAB, Arduino IDE, Google Colab
- **Languages:** English, Hindi, Bengali

PROJECTS

Radio-Frequency Identification Door Lock System

- Developed a secure RFID-based door lock system using Arduino and servo motor.
- Enabled automated access control with real-time authentication and multi-user support.

Smart Blind Stick with Inbuilt Tracking System

- Built a GPS-enabled smart blind stick integrated with ultrasonic obstacle detection.
- Implemented SOS alert functionality to improve navigation safety for visually impaired individuals.

Fish Farming & Water Quality Measurement System

- Designed an Arduino-powered automation system using pH, temperature, TDS, ammonia, and dissolved oxygen sensors.
- Integrated machine learning models to predict fish species presence based on water quality parameters.

WORK EXPERIENCE

Project Intern

Institute of Engineering and Management (IEM) IEDC Laboratory, Kolkata

2024 – Present

- Assisted in IoT and embedded system-based prototype development.
- Contributed to research and development in smart automation projects.

EDUCATION

B.Tech in Electronics and Communication Engineering	2023 – Present
Institute of Engineering and Management, Kolkata	
CGPA: 1st Year: 7.70 — 2nd Year: 7.65	
Class XII (CBSE)	2022 – 2023
Aditya Academy Secondary	
Percentage: 83.33%	
Class X (CBSE)	2020 – 2021
Aditya Academy Secondary	
Percentage: 70.66%	