# Aman Kumar

New Delhi, India

github | linkedin | amankumar.me8178@gmail.com | +91-8506940925

## Education

**Guru Gobind Singh Indraprastha University** 2022 - 2026
Bachelors of Technology in Electronics and Communication Engineering **CGPA: 7.8/10**

**Goverment Boys Ser. Sec. School** 2019 - 2020
Senior Secondary (Class XII) **Percentage: 75.2**

## Experience

**Firmware Developer intern | BrightBots Pvt. Ltd.** Dec 2024 - Mar 2025

- Embedded Systems Firmware Development: Built and optimized firmware for STM32 and ESP32, making things run smoothly with I2C, SPI, UART, and DAC. Worked on real-time control systems to handle data efficiently and keep everything responsive.
- Sensor Integration Control: Designed a subsystem using an encoder with DAC on ESP32, improving motion control and signal processing. Integrated VL53L0X LiDAR with a BNO sensor for precise alignment in a row changer project, making the system more accurate and reliable.
- Hardware Debugging Optimization: Troubleshot and fixed hardware and firmware issues to keep things running without hiccups. Did extensive testing and calibration to make sure the system was as accurate and efficient as possible.

**Digital Design Trainee | PinE Training Academy** Jul 2024 - Aug 2024

- Completed hands-on training in digital design with a focus on VHDL, Verilog, and FPGA implementation.
- Gained practical experience in designing, simulating, and implementing digital circuits using hardware description languages (HDL).
- Developed and tested projects, including LED pattern generation, a 4-bit signed calculator, and an SSD stopwatch on FPGA.

**Embedded Intern | Sciroit Technology** Mar 2024 - Jun 2024

- Worked on projects using Raspberry Pi and ESP32/8266 for embedded system development.
- Developed embedded software using Embedded C programming for hardware interfacing and control.Utilized Python for scripting and automation tasks in embedded environments.
- Implemented web-based control systems using Flask to interface with embedded devices.Applied OpenCV for image processing tasks, enhancing the functionality of embedded systems.

## Projects

**Face Recognition Attendance System**

- Developed a face recognition-based attendance system utilizing OpenCV for image processing and MediaPipe for facial landmark detection.
- Implemented real-time face recognition and tracking to mark attendance automatically, enhancing accuracy and reducing manual intervention.
- Optimized the system for smooth performance, ensuring low latency and efficient processing on standard hardware.

**4-bit Signed Calculator**

- Designed and implemented a 4-bit signed calculator using Verilog and VHDL to perform arithmetic operations on signed binary numbers.
- Simulated and synthesized the design on FPGA, ensuring accurate operation and testing for addition, subtraction, multiplication, and division.
- Gained hands-on experience with digital logic design, HDL, and FPGA toolchains.

## Certifications

- **PinE Training Academy** Verilog and VHDL on FPGA
- **C-DAC** PCB Designing
- **Coursera** Embedded Systems and Development Enviroment.
- **Coding Ninjas** C++ programming Language

## Skills and Interests

C, C++, Python, Verilog, VHDL, MATLAB, Git, Open CV, MediaPipe, Flask, Django, JavaScript, React.js, HTML, CSS, SQL, MongoDB, AppWrite, Arduino IDE, Thonny, EasyEDA, Multsim, VS code.

## Relevant Coursework

Universal Asynchronous Receiver-Transmitter(UART), Data Structures and Algorithm, Database Management System, MySQL, Machine Learning, Artificial Intelligence

## Open Source Contribution

- Contributed to many Embedded and Machine Learning Projects **GitHub** providing insights and knowledge to the community.
- Contributed over **350+ LeetCode solutions** to share knowledge and insights with the community.