

CURRICULUM VITAE

PERSONAL DETAILS

Name: Shubham Kumar Gupta

Date of Birth: 04-08-2000

Age: 25

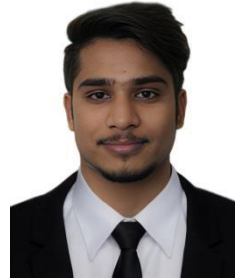
Gender: Male

Nationality: Nepalese

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CAREER OBJECTIVE

Motivated Electronics and Instrumentation Engineering graduate with strong foundation in Electronics circuit design, control systems, and industrial instrumentation, aiming to contribute to impactful EI&C projects while proving my capabilities in real-world engineering environments.

EDUCATION HISTORY

Bachelor's degree

Institution: National Institute of Technology, Silchar, **India**

University /Board: Institute of National Importance

Percentage: 79.1%

Major: Electronics and Instrumentation Engineering

Year: (2021-2025)

Final Year Project: **Blockchain based Identity management and verification system.**

WORK EXPERIENCE

Company: **Indian Institute of Technology Kanpur**

Position: **Research Intern**

Duration: **May 2024 – July 2024**

Responsibilities:

- Preprocessed volumetric CT and MRI data for medical imaging tasks.
- Developed and trained a 3D U-Net model for organ segmentation.
- Validated model performance using k-fold cross-validation; achieved 91% Dice score.
- Optimized model performance and gained experience with high-performance computing.
- Annotated medical images and contributed to data pipeline improvements.

TECHNICAL SKILLS

- **Electrical & Control Design:** Electrical Schematics, Loop Diagrams, Control Panel Design Basics, PLC Programming (Ladder Logic), PID Controllers, DCS (Basic)
- **Instrumentation & Measurement:** Sensor Selection (Pressure, Temperature, Flow, Level), Instrument Datasheets Calibration Methods, Signal Conditioning, Hazardous Area Awareness
- **Software & Tools:** Basics of MATLAB/Simulink, LTSpice, LabVIEW, MS Excel, Oscilloscope, Multimeter
- **Programming:** C/C++
- **Soft Skills:** Technical Communication, Team Collaboration, Problem Solving, Project Management, Client-Focused approach.

CERTIFICATIONS

- Basics of MATLAB, C Programming

PERSONAL PROJECTS

• **PROJECT 1: Power Generation Using Piezoelectric Sensors**

- Role: Designer & Circuit Developer
- Tools and Software Used: LTSpice, Oscilloscope, Multimeter, Breadboard Prototyping
- **PROJECT DESCRIPTION:**

Developed a small-scale renewable energy harvesting system using six piezoelectric sensors to convert ambient mechanical vibrations into usable electrical energy. Designed and tested the circuit using LTSpice and verified signal outputs through multimeter and oscilloscope measurements. Successfully demonstrated charging potential for low-power devices, highlighting sustainable energy innovation at a micro level.

• **PROJECT 2: Intelligent Hormone (Insulin) Pump Modeling with Efficient Controller**

- Role: Control System Modeler
- Tools and Software Used: MATLAB, Simulink
- **PROJECT DESCRIPTION:**

Simulated a closed-loop feedback system to model precise insulin delivery in diabetic patients using PID control logic. The model mimicked physiological glucose regulation, where control parameters were iteratively tuned for optimal delivery accuracy. Demonstrated the ability to simulate real-time biomedical control systems effectively, bridging healthcare needs with engineering solutions.

• **PROJECT 3: Automatic Water Level Controller Using PLC**

- Role: PLC Programmer
- Tools and Software Used:
 - o Siemens LOGO! Soft Comfort v8.x (Function Block Diagram - FBD mode)
 - o Internal simulation tools within LOGO! Software
 - o Basic logic elements: Set/Reset latch, digital inputs (sensors), digital outputs (pump)
- **PROJECT DESCRIPTION:**

Developed an automatic water level control system using Siemens LOGO! Soft Comfort in Function Block Diagram (FBD) mode. The system used two digital input sensors. one for low level, one for high level - to control a pump (digital output). My core logic involved implementing a Set/Reset (SR) latch. When the low-level sensor activated, it 'set' the latch, turning the pump on. The pump stayed on until the high-level sensor activated, which 'reset' the latch, turning it off. I heavily utilized the internal simulation tools within LOGO! Software to rigorously test and verify the latching behavior and the overall control sequence, ensuring robust and reliable operation. This project was key in solidifying my understanding of FBD programming, latching logic, and closed-loop control in industrial automation.

- **PROJECT 4: Traffic Light Control System using PLC (Ladder Logic)**

- Role: PLC Programmer and Logic Designer

- Tools and Software Used: Siemens LOGO! Soft Comfort (LAD), TON (ON-delay) Timers, Ladder Logic Programming

- **PROJECT DESCRIPTION:**

Designed and implemented an automated traffic light control system using Siemens LOGO! PLC and ladder logic programming. The system controls red, yellow and green signal lights in a continuous sequence based on preset timing intervals (Red: 5s, Yellow: 3s, Green: 8s). Utilized cascading ON-delay timers to ensure each light activates only after the previous one completes, preventing output overlap. The project includes a manual start input (`I1`) and a simulated always-on input (`I2`) to facilitate looping behavior in simulation. This project demonstrates core concepts of PLC automation, sequential logic design, and timer-based control systems in real-time industrial scenarios.