

# Shivam Goswami

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bhopal, MP • B.Tech – Sustainable Energy Technology, NIT Kurukshetra

## SUMMARY

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Passionate B.Tech student focused on sustainable energy technology, full-stack development, and AI/ML, with strong interests in solar PV systems, energy analytics, and smart energy solutions. Skilled in Python, MATLAB, machine learning, web development, and simulation tools, with hands-on experience building tech-driven projects across renewable energy and software domains. Tech enthusiast eager to apply engineering and development skills to innovative electrical and clean energy projects.

## EDUCATION

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**National Institute of Technology, Kurukshetra**  
B.Tech in Sustainable Energy Technology  
DEPT- Electrical engineering

*Aug 2024 – 2028*  
GPA: 8.0(1st sem),  
7.7(2nd sem)

## TECHNICAL SKILLS

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**Renewable Energy & Power Systems:** Solar PV Systems, PVGIS API, Solar Resource Assessment, MPPT Algorithms, Load Flow Analysis, Energy Consumption Analysis

**Core Electrical Engineering:** Power Systems, Power Electronics, Electrical Machines, Electrical Circuits, Network Synthesis, Renewable Energy Systems

**Tech languages:** Python, C, MATLAB/simulink, mysql, powerbi, html, css

**Web & Full-Stack Development:** JavaScript, React.js, Node.js, Express.js, MySQL, Supabase, REST API Integration, Git, System Architecture Planning

**Design & Product Skills:** Figma, UI/UX Design, Prototyping, Project Management, Team Collaboration

## PROJECTS

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### Home Energy Consumption Analyzer

🌐 Repository

Personal Project — 2024

Developed a Python-based tool to calculate and visualize daily and monthly household energy consumption patterns.

- Performed appliance-wise analysis with graphical representations

### Solar PV MPPT Model with Fuzzy Logic Controller

🌐 Repository

NIT Kurukshetra — 2025

Designed and simulated a Maximum Power Point Tracking (MPPT) system for Solar PV array using Fuzzy Logic Controller in MATLAB/Simulink.

- Implemented fuzzy inference rules to handle non-linear irradiance and temperature variations
- Demonstrated improved tracking speed and reduced steady-state oscillations

### AI Rooftop Solar & Inverter Monitoring System

🌐 Repository

Ongoing Personal Project — 2025

Developing an AI-powered smart monitoring platform for rooftop solar PV systems and inverters with predictive maintenance capabilities.

- Building intelligent failure prediction models to detect possible faults in advance and reduce system downtime
- Developing preventive maintenance recommendations and real-time performance monitoring features
- Integrating solar panel cleaning prediction based on environmental conditions and system efficiency trends
- Working on analytics dashboard, inverter health tracking, and AI-driven energy optimization features

### **SAKSHAM – Student Collaboration Platform**

 [Repository](#)

Personal Project — 2024

Developed a full-stack platform for student collaboration and project sharing.

- Designed backend APIs and authentication system

## **ACHIEVEMENTS & PARTICIPATION**

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- Top 10 in JKLU Hackathon with an innovative fintech solution [LinkedIn](#)
- Participated in Excalibur TechFest at NIT Kurukshetra [LinkedIn](#)

Active participant in renewable energy and attended technical workshops as an active member of the college electrical society.

## **SOFT SKILLS**

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Problem Solving • Teamwork • Communication • Time Management • Analytical Thinking • Research-Oriented

## **HOBBIES & INTERESTS**

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Solar Energy Research • Renewable Energy Systems • Power Systems Modeling • Technical Blogging • Reading Research Papers