

# AI for Sustainability: Empowering Rooftop Solar Verification

Harnessing the power of Artificial Intelligence to accelerate clean energy adoption through precise and efficient rooftop solar verification.



Made with **GAMMA**

# Meet the Innovators: Team Trisquad



- **Likitha S N** (Team Lead)
- **Impana M** (Team Member)
- **Mohan M** (Team Member)

Our dedicated team brings together expertise and passion to drive sustainable solutions.



# Our Mission: Aligning with the PM Surya Ghar Yojana

Our project directly supports the **PM Surya Ghar Muft Bijli Yojana**, a government initiative aimed at providing free electricity to one crore households through rooftop solar installations. Our AI solution is designed to streamline and accelerate the verification process, ensuring wider and faster adoption.

- This initiative is crucial for India's clean energy goals and energy independence.





# The Challenge: Accelerating Clean Energy Adoption

## Manual Verification is Slow

Traditional physical inspections are time-consuming and inefficient for large-scale deployment.



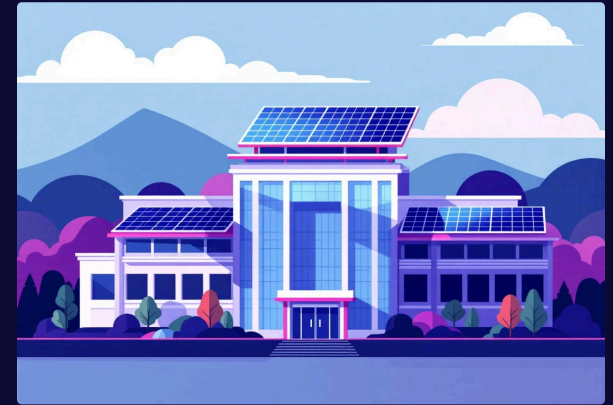
## Costly & Error-Prone

Human errors and operational costs impede the rapid expansion of solar programs.



## Scaling Government Schemes

Government initiatives require robust, scalable verification to meet ambitious installation targets.



# The Power of AI: Transforming Solar Verification



## Boost Efficiency

AI enables rapid processing of verification requests, significantly reducing turnaround times.



## Ensure Accuracy

Automated systems minimize human error, leading to more reliable and consistent results.



## Prevent Fraud

Advanced detection capabilities help in identifying false claims and preventing subsidy misuse.



## Achieve Scalability

Our solution can process vast amounts of data, supporting widespread adoption across diverse regions.



# Our Solution: A Scalable AI-Based System



## Unlocking Clean Energy with Precision

Our system automates the detection and verification of rooftop solar panels using cutting-edge AI, providing precise data and clear decisions.





# Key Features and Benefits: Efficiency, Accuracy, Accessibility



## Satellite & Rooftop Imagery

Leveraging diverse image sources for comprehensive panel detection.



## AI Object Detection

YOLOv8-powered detection for accurate identification of solar panels.



## Automated Area Calculation

Precise measurement of installed solar panel area.



## Clear Verification Decisions

Delivering a simple 'Yes/No' outcome for verification.

# Impact and Scalability: Reaching Millions

●●●●● 95%

## Accuracy Rate

Our AI model achieves high accuracy, minimizing false positives and negatives.

●●●●● 10X

## Faster Verification

Automated processing is significantly quicker than traditional manual checks.

●●●●● 70%

## Cost Reduction

Lowering operational expenses associated with physical inspections.

●●●●● 1 Crore

## Households Served

Scalability to support government goals under PM Surya Ghar Yojana.

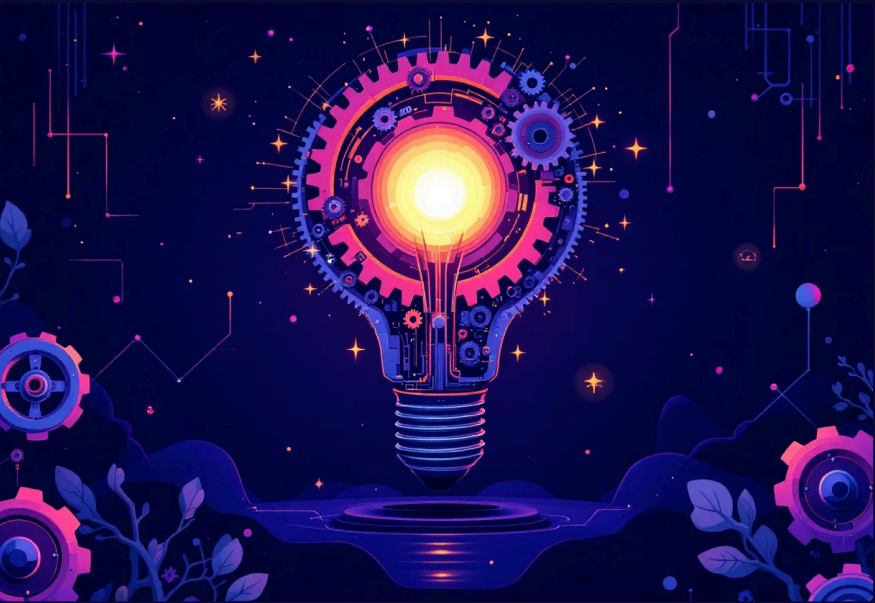
This scalable solution is designed to empower communities, foster clean energy adoption, and support India's journey towards sustainable development.



# From Idea to Reality: Our Journey

## Ideation Phase

Sparking the concept during the Global Learning Connect ideathon.



1

## Problem Definition

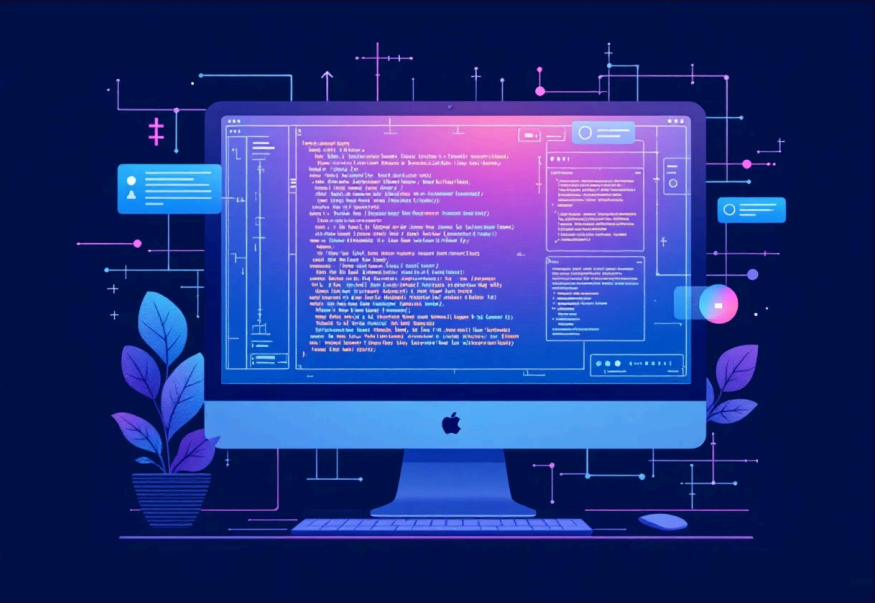
Identifying the critical need for scalable solar verification.



2

## Solution Prototyping

Developing the AI model and core system architecture.



3

## Testing & Refinement

Rigorous testing and iterative improvements for optimal performance.



4

Our project was nurtured through an ideathon organized by Global Learning Connect, driving us to develop a scalable AI-based solution.



# Next Steps: Driving India's Green Energy Revolution

## Real-time Satellite Integration

Future plans include integrating live satellite feeds for instant verification.

## Web Dashboard Development

Creating an intuitive dashboard for monitoring and managing solar installations.

## Expand Training Data

Continuously enhancing AI accuracy with a broader and richer dataset.

## Thank You

Team Trisquad: Likitha S N | Impana M | Mohan M