From pixels to panels. Terraces to terawatts.

Helioscope

Evolution

The Problem & The Product

Phase 1

The Problem

- Cities lack clear visibility into rooftop solar potential.
- Manual surveys are slow, expensive, and unscalable.
- Urban climate goals are stalled due to data inaccessibility.
- High resolution satellite images are underused.
- AI can unlock gigawatts of rooftop solar using aerial imagery.

Phase 2

Our solution

- AI tool that detects usable rooftop space from .tif images.
- Calculates installable area in m^2 using 0.3m resolution.
- Trained on DeepLabV3+ (ResNet34 encoder).
- Outputs rooftop masks + area instantly.
- Future: irradiance, ROI, vendor integrations.

Business Model

Revenue Streams

- Tiered plans as subscriptions for real estate firms
- Free-premium version for NGO's or local communities at smaller scales
- Full API Integration for clean tech developers etc

Cost Structure

Our primary costs include cloud compute (for model inference), basic storage, and dev/ops costs.

- Minimal hardware dependencies: No drones or local deployments required.

Scalability

- Open-source foundations reduce tech stack costs.
- Our model can be deployed in any region with satellite imagery, with no retraining needed for new cities.
- The software is designed to scale horizontally across use cases, regions, and partners.

Technical Approach

Our competitive edge

No input other than initial image

Helioscope uses pre-trained AI models to analyze satellite imagery without human intervention, eliminating the need for expensive manual mapping, on-site surveys, or annotation work.

Modularity

Compatible with any standard aerial or satellite .tif imagery. Our pipeline is built to accept open or commercially available satellite datasets, making it versatile and globally deployable — whether it's used in India, Southeast Asia, or beyond. Area calculations can also change depending on image resolution

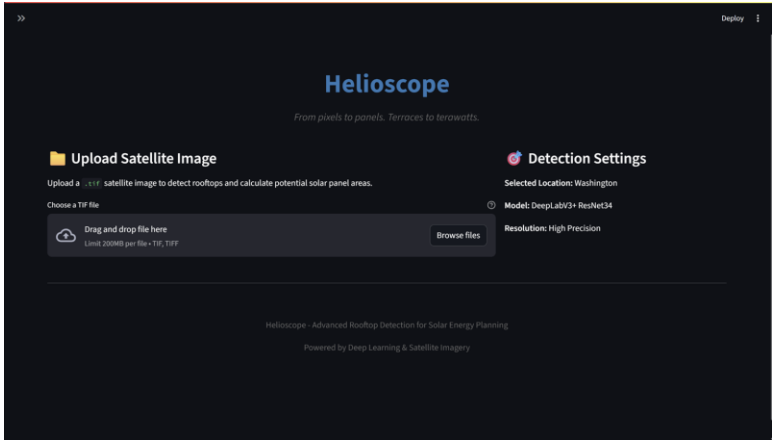
Empowers sustainable urban development

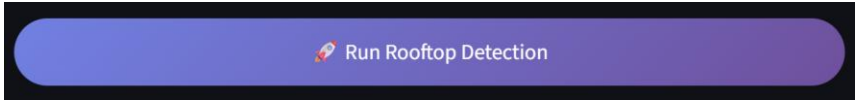
Helps cities meet decarbonization targets faster by streamlining solar adoption and revealing hidden rooftop assets. It's also optimized to run offline or with minimal internet, making it viable for rural, underconnected, or disaster-prone areas.

Enables data-driven solar policy and investment decisions

By revealing exactly how much rooftop solar potential exists block-by-block, Helioscope helps governments, urban planners, and investors prioritize high-impact solar deployments and infrastructure upgrades.

Demo:





Soon, we'll be ready to pilot Helioscope in a real-world city deployment — help us take it live.

Looking for partners, feedback, and early adopters to scale rooftop solar from the sky.

Helioscope

Its Scalable. Repeatable. Open-source capable.