



SolaNet

Unlock undiscovered solar energy potential
with the help of AI

Built by Carmen Berndt, Christoph Dobra, Max Herbst & Haokun Zheng

A wide-angle photograph of a solar farm in a winter setting. Rows of solar panels are tilted towards the sun, casting long shadows on the snow-covered ground. In the background, a range of rugged mountains is partially covered in snow under a clear sky. The word "Motivation" is overlaid in the center in a white, sans-serif font.

Motivation

Motivation

Hard to use calculators

Due to the difficulty of existing solar panel system estimations, many suitable areas

Solar energy reducing carbon emissions

The energy sector is one of the largest emitters of CO₂ emissions. Green energy solutions like solar panels play a vital role in reducing emissions.

Utilize unused areas

U.S. Commercial Rooftops
Hold 145 Gigawatts of
Untapped Solar Potential



A solution powered by AI

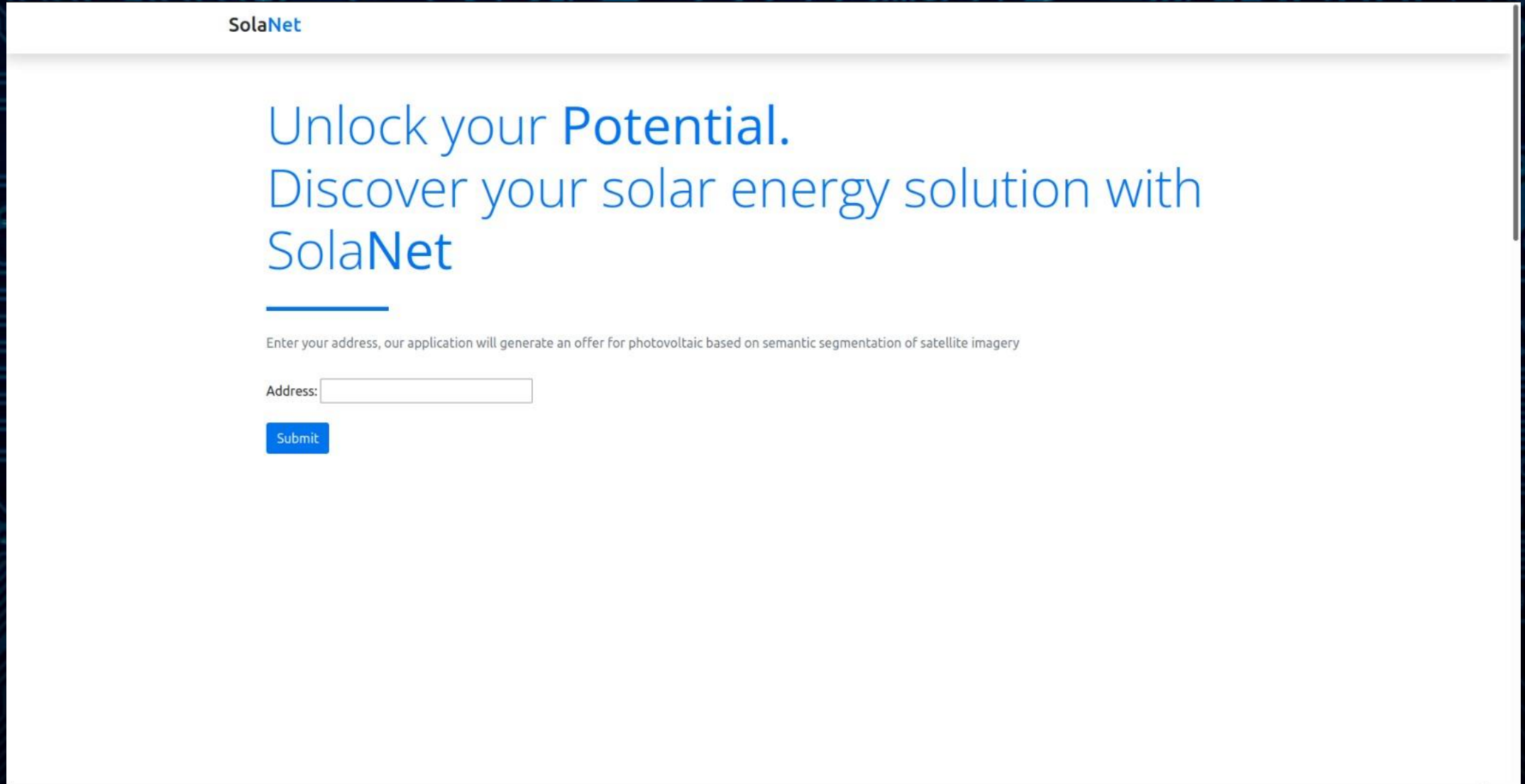
Through high-res satellite images and semantic image segmentation, we built an web-app that allows virtually anyone in the world to evaluate the potential for solar energy solutions for a specific location.

Processing chain



Processing

1. User enters address where a potential solar panel system should be evaluated



The screenshot displays the SolaNet website interface. At the top left, the "SolaNet" logo is visible. The main heading reads "Unlock your Potential. Discover your solar energy solution with SolaNet". Below this, a subtext states: "Enter your address, our application will generate an offer for photovoltaic based on semantic segmentation of satellite imagery". There is an "Address:" label followed by a text input field. A blue "Submit" button is located below the input field.

SolaNet

Unlock your Potential. Discover your solar energy solution with SolaNet

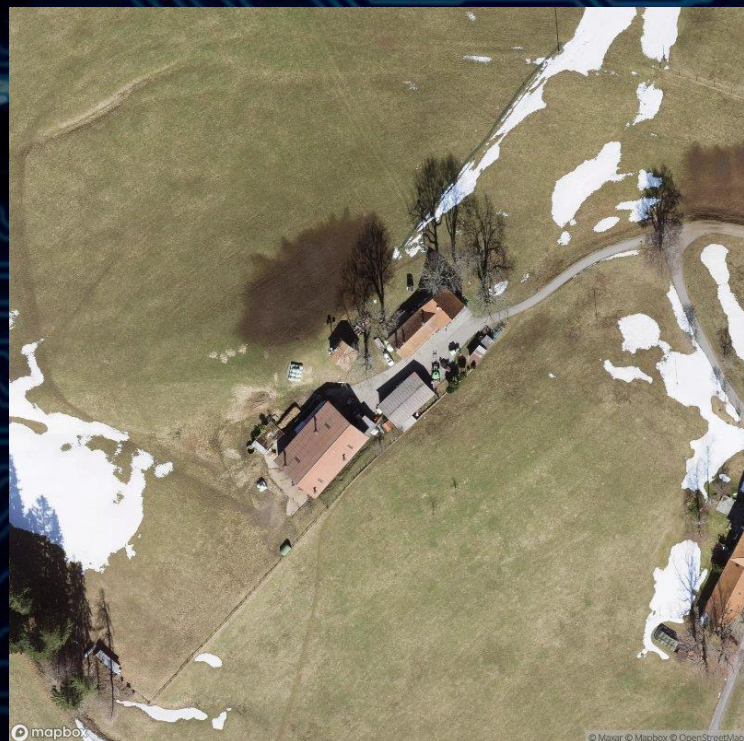
Enter your address, our application will generate an offer for photovoltaic based on semantic segmentation of satellite imagery

Address:

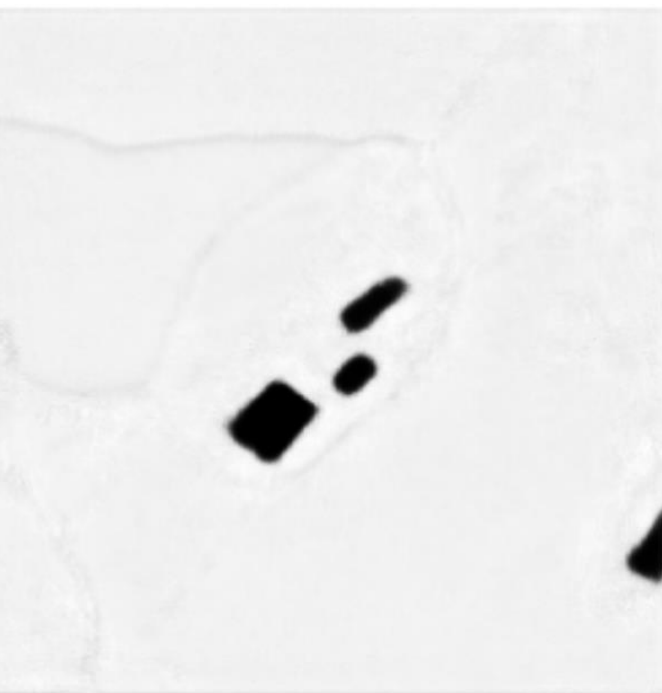
Processing chain

2. Pull high-res satellite images from an online provider
3. Process image through trained ai model and determine
suitable roof area

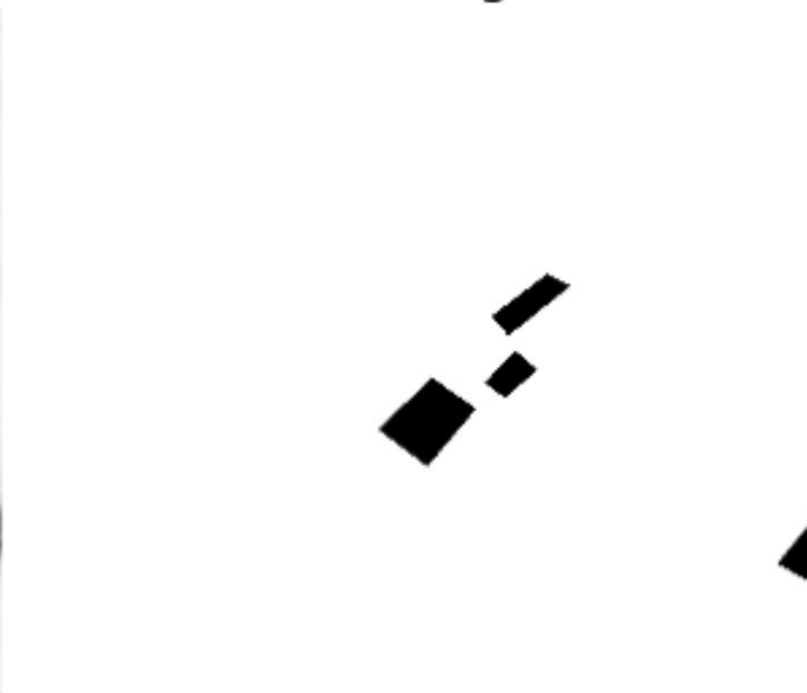
Results of our trained model



Result



Target



Processing

Calculate customized solar panel solution



Identified Suitable Roof Area

545 m² | 125.65 kWp installable Capacity

Estimated Yearly Revenue Performance

50% self-consumption: 26492,18€

30% self-consumption: 20444,75€

15% self-consumption: 18932.89€

Estimated Initial Investment Costs

Solar Panel Costs: 145180,80€

Power Inverter Costs: 2397,65€

Installation Labor Costs: 11650.01€

Total required initial investment: 159230,41€

Calculated Break-even-Point of investment

(assuming 30% self-consumption)

7,13 Years

Show Graph

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Thank you for your attention, we are
looking forward to your questions!

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