



Go Solar

Here For Your Solar Needs



Microsoft AI Challenge

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Problem



**CLIMATE
CHANGE IS THE
ISSUE OF OUR
GENERATION.**

**SOLAR ENERGY
IS A SOLUTION**

- The sun is free
- Solar can help you save \$\$
- It reduces greenhouse emissions

**... BUT IT IS TOUGH
TO GET STARTED**

- How do you know if your roof gets enough sun?
- How many solar panels do you need?
- Who is going to install them?
- How much \$\$ do you save?
- Do you get any rebates?

Proposed Solution : A Solar Assessment App

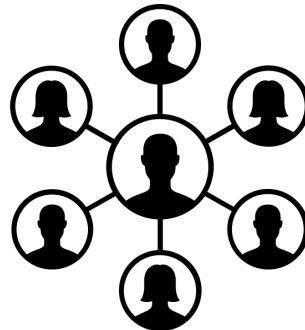
The app uses deep learning and satellite imagery data to create a solar map that estimates a roof's solar potential.



1

Assess

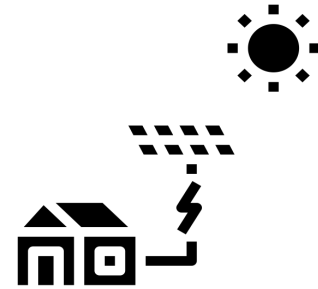
Chat with our AI bot to get started. The bot will create a your solar profile for that contains your solar map, help estimate costs and savings and see if you are eligible for any subsidies. .



2

Connect to a Solar Professional

The bot then matches the solar profile with experienced solar implementation professionals. Professionals are selected based on reviews and ratings to maintain a competitive market.



3

Reduce Carbon Footprint

Easily harness the power of the sun, while saving on utility bill. The app is able to create a community of individuals by providing a referral discount and helping spread the sustainability agenda.

UN Sustainable Development Goals

0
1



CLIMATE ACTION

Our platform makes it easy for individuals and businesses to learn about and implement solar energy, enabling Canada to leapfrog to a cleaner, more resilient economy.

([UN Goals](#) 13.2, 13.3, 13B)

SUSTAINABLE CITIES AND COMMUNITIES

By advancing adoption of solar energy, our platform will help communities adapt to climate change by shifting to a renewable, emission free energy source ([UN Goal](#) 11B).

0
2



Solution Architecture

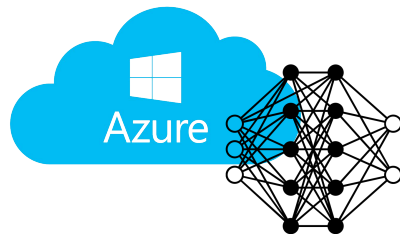
1. Data Collection



Satellite imagery from publicly available sources: Spacenet, DeepGlobe and Landsat satellite data. Weather Data from Natural Resources of Canada

2. Microsoft Azure

Use the Azure Machine Learning Studio for data cleaning, model training and testing.



Created by Product Pencil from Noun Project

3. Deep Learning

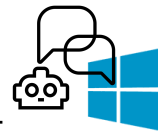
Train a CNN to detect roofs, trees and combine with weather data to:

1. Create a **solar map** - a baseline estimate of a roof's solar potential
2. Calculate how many panels can fit on a roof



Sample solar map

4. AI Chatbot

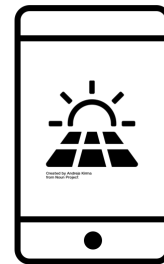


We use the Microsoft azure bot service to develop a bot to interact with customers.

It will:

1. Explain your personalized solar map
2. Calculate your costs and savings
3. See if you get any rebates
4. Connect you with a professional installer

5. Deploy Solar App and help individuals and businesses install solar panels!



Created by Three Six Five from Noun Project

Target



Audience

01 | Businesses

02 | Homeowners

74%

Think we should use solar
“as much as possible”

70%

Agree that “In the near future,
we should produce 100% of our
electricity from renewable
energy sources such as solar
and wind”

Why? Because the time is NOW!

- Only 0.5% of Canada’s total renewable energy is drawn from solar. [\[1\]](#)
- Ontario Government is rolling back it’s tariff program which encouraged greater use of renewable energy including solar. [\[2\]](#)
- Majority public support [\[3\]](#)
- Solar is easy to implement on an individual level

Benefits of Approach

- Empower individuals to take climate action by creating a 1-stop shop
- Boost solar industry by creating jobs and maintaining competitiveness in the market
- Reduce CO2 emissions of the entire country
- Create ease transition to renewable energy

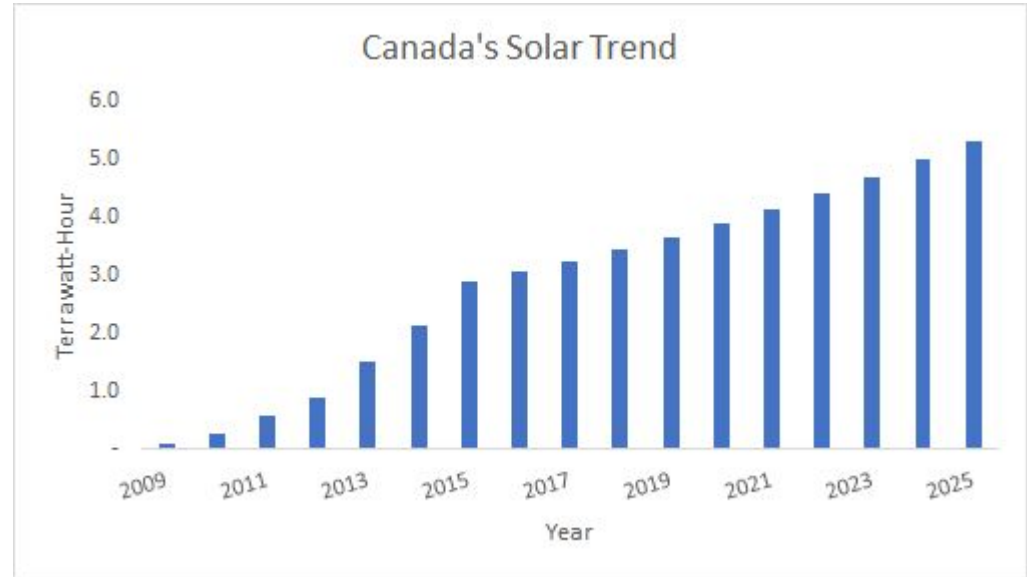


Figure 2: Projections of Solar Panel capacity in Canada based on data from 2009-2017.* The graph predicts a 6.2% increase every year. [\[4\]](#)





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Thank You.

