Project Description

Job Title: **Machine Learning Intern: Solar PV identification from Satellite Imagery**

Job description: We are seeking a motivated intern to support the development of machine learning models for photovoltaic (PV) system identification using satellite imagery. The intern will work on geospatial data processing, computer vision, and model development to detect and map PV installations at scale.

Key responsibilities include:

- Develop and train machine learning / deep learning models for PV detection from satellite imagery
- Process and analyze geospatial datasets (e.g., satellite images, GIS layers, building footprints)
- Perform data preprocessing, annotation, and quality control for training datasets
- Evaluate model performance and optimize detection accuracy
- Support integration of PV detection outputs into geospatial workflows or web-based platforms

Project description: This internship is part of the Singapore Solar PV Roadmap initiative. The project aims to develop a web-based platform to identify and record existing photovoltaic (PV) installations using satellite imagery, in order to better inform the assessment of Singapore's solar potential. The intern will support the development of workflows for detecting PV systems from satellite images, processing geospatial data, and integrating the results into a web platform for visualization and analysis. The work will contribute to building a more complete and up-to-date database of existing PV installations across Singapore.

Competencies gained:

- Experience in applying machine learning / computer vision techniques to remote sensing data
- Hands-on exposure to geospatial data processing and PV mapping workflows
- Understanding of how spatial data supports solar potential assessment and energy planning
- Experience contributing to the development of a web-based geospatial platform
- Exposure to a real-world national-level project in renewable energy and sustainability

Skills Requirement:

1. Currently pursuing a degree in Computer Science, Data Science, Electrical Engineering, Geomatics, Remote Sensing, Geography, or a related field
2. Basic knowledge of image processing, computer vision, or machine learning
3. Interest in geospatial analysis, remote sensing, or renewable energy applications

4. Ability to work with data carefully and systematically

Preferred Qualifications:

- Familiarity with deep learning frameworks such as PyTorch or TensorFlow
- Experience working with satellite imagery or map-based datasets
- Interest in solar energy, sustainability, or urban analytics

Interested applicants to kindly submit CV or Portfolio to Dr Sun Huixuan (sersunh@nus.edu.sg) and Soe Pyae (soepyae@nus.edu.sg) for review.