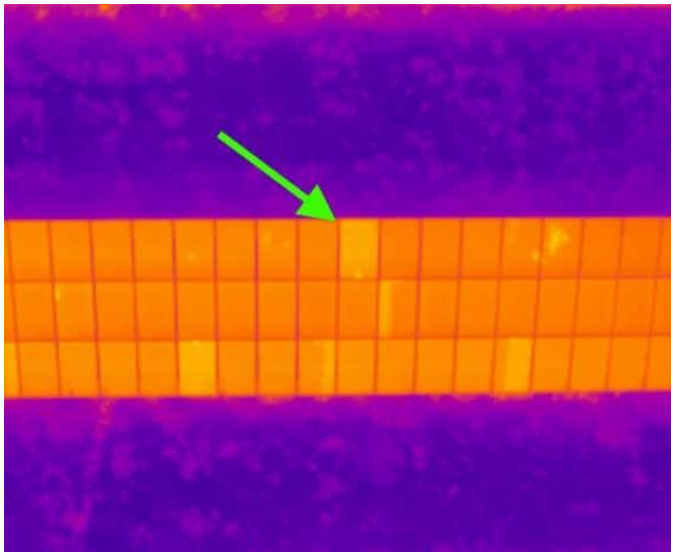
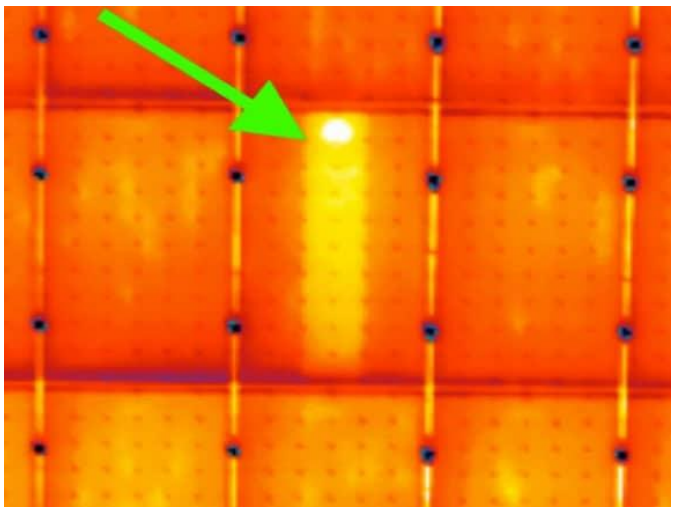
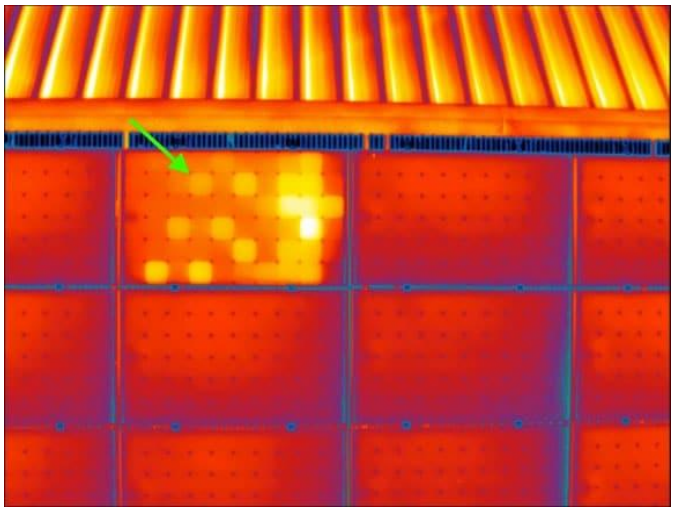
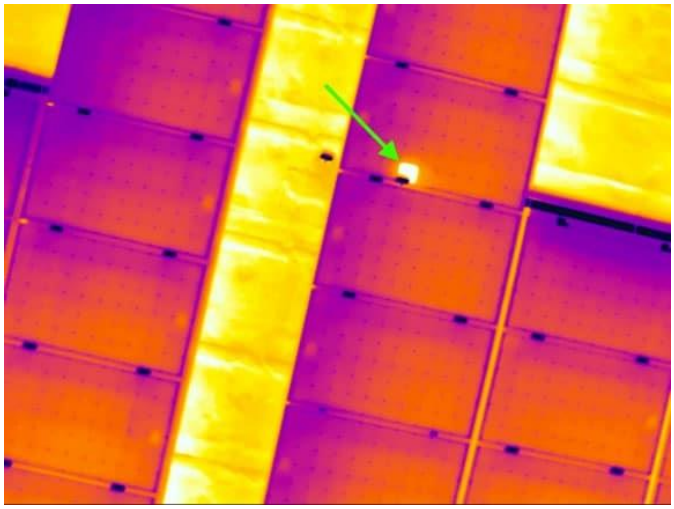
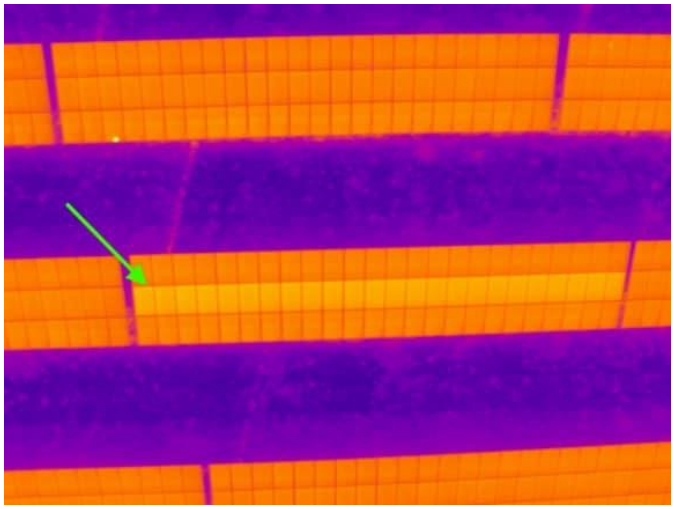
We have built a Convolutional neural network that was trained on images of faulty and normal explained on previous page, same way this Multi-class Classification model is trained on 5 classes of fault such as

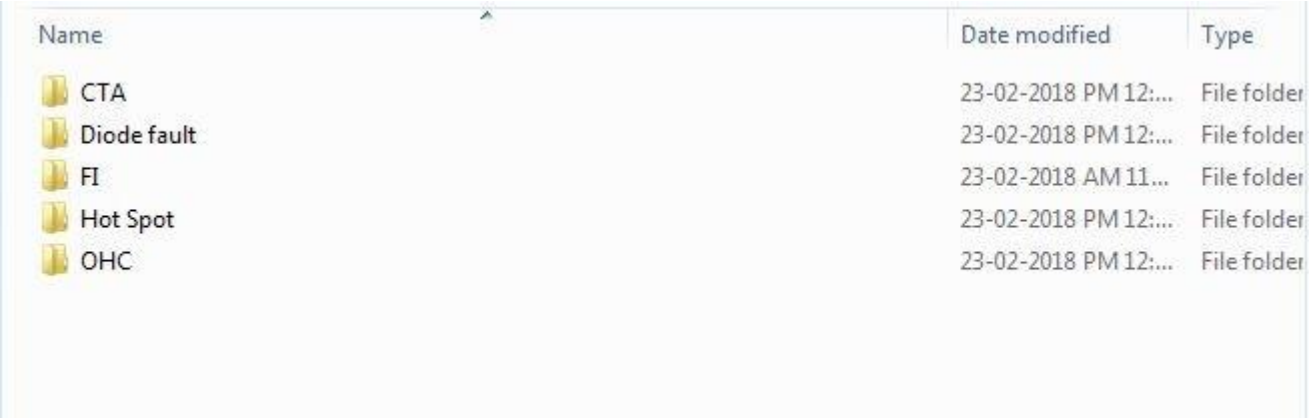
1. Clusters of Thermal Anomalies
2. Diode fault
3. Faulty Interconnections
4. Hot Spot
5. Over-Heating Components

Solar Panel Thermal Image	Fault Class
	Over-Heating Components
	Diode fault

Solar Panel Thermal Image	Fault Class
	Clusters of Thermal Anomalies
	Hot Spot
	Faulty Interconnections

Preparing Dataset

Prepare two folders named “ test_set” and “training_set” into your working directory, it may take a while as there are nearly 500 images in both folders, which is the training data as well as the test dataset. Make sure to create a new directory and name it “dataset” and paste the above downloaded dataset folders into it.



First, the folder “training_set” contains five sub folders with name same as Fault names, each holding same number of images of the respective category. Second, the folder “test_set” contains five sub folders with name same as Fault names, each holding same number of images of respective category.