

**2021 IEEE  
ICETCI  
Competition in  
Remote Sensing**

1<sup>st</sup> March to  
30<sup>th</sup> July, 2021

# Are you ready? feature EXTRACTION from image using AI/ML

Extraction of Electrical Substation (Location & Boundary) from high resolution satellite data using Machine Learning Techniques (Open Source Tools)

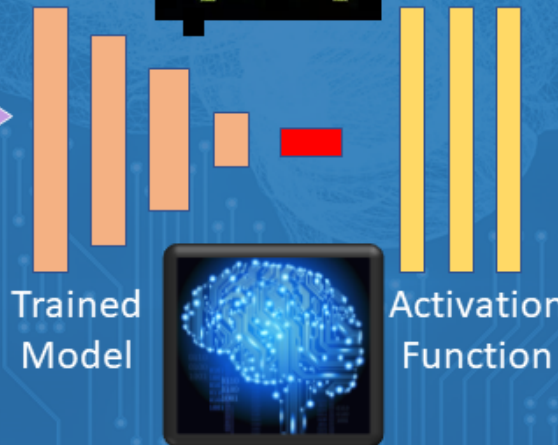
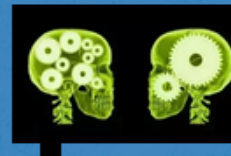
Visit : <http://www.ietcint.com/>

## VIRTUAL COMPETITION



### INPUTS

- Satellite data
- Vector Data



- Substation Location Identified
- Substation Boundary extracted

Organized by:



Regional Remote Sensing Centre - Central  
National Remote Sensing Centre, Indian Space Research Organisation,  
Department of Space, Government of India, NAGPUR - 440 033



Maharashtra Remote Sensing Application Centre  
Government of Maharashtra,  
NAGPUR - 440 010

## IEEE ICETCI 2021 Competition

on

### **MACHINE LEARNING BASED FEATURE EXTRACTION OF ELECTRICAL SUBSTATIONS FROM SATELLITE DATA USING OPEN-SOURCE TOOLS**

Machine learning comes under Artificial intelligence where a machine mimics the human brain in processing the data for various purposes like detecting objects, recognizing speech, translating languages, extracting features and making decisions. Feature extraction of the Power infrastructure using Machine learning techniques is a new challenge since much attempts have not been done in this field.

IEEE-ICETCI 2021 is organizing a Virtual Competition in association with RRSC-Central, NRSC, ISRO, Nagpur on '**Machine learning based feature extraction of Electrical Substations from Satellite data using Open-Source tools**', and will take place from 1March to 30July, 2021.

The task of this competition is to develop a Machine learning-based software using open source tools. Further extract Electrical Substations from high resolution satellite data, and submit a paper (PDF) describing the techniques employed in solving the problem.

**Evaluation** will be done in two step process. In the first step, top 10 entries will be selected based on a metrics to evaluate correct identification and exact demarcation of substation boundary/extent. In the second step, for the top 10 entries, a code review will be done, software model efficiency will be tested followed by virtual presentation; the best three will be selected as **winners** of the competition.

The contestants will be provided with the **Training Dataset** of 100 Satellite data chips of ~1m resolution for training. Each image chip will have one electrical substation feature. Set of Points and Polygons AOI will also be provided for training the Machine learning network. A **Testing Dataset** of 20 satellite data chip's mosaic, containing substations and other features will be provided for testing. The Tutorial **Links** will be provided for online learning of the API's and libraries.

The winner may get an opportunity to present the paper in the IEEE-ICETCI 2021 Conference during 25-27 August 2021.

Competition details are available at the following URL.

[http://ietcint.com/user/electrical\\_substation\\_detection](http://ietcint.com/user/electrical_substation_detection)