



**IJIRCCCE**

e-ISSN: 2320-9801 | p-ISSN: 2320-9798



# INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

Volume 11, Issue 5, May 2023

**ISSN** INTERNATIONAL  
STANDARD  
SERIAL  
NUMBER  
INDIA

**Impact Factor: 8.379**



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# Survey on Land Classification on Satellite Images Using CNN

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**ABSTRACT :** Land cover classification from these images is a difficult task because of very large sized data and high variation types. Satellite based information is presently available as huge sets of high resolution images from a large number of satellites like Sentinel, Landsat8, etc. Land cover classification from these images is a difficult task because of very large sized data and high variation types. The purpose of land use and land cover classification is that monitoring and identifying the various land cover classes exactly. Land-use is the rational and judicious approach of allocating available land resources for different activities (such as settlements, arable fields, pastures, and managed woods) within a city. The use of a particular patch of land and its physical character are linked. However, research that establishes this link is lacking despite the proliferation of geo spatial data.

**KEYWORDS:** Land use and land cover classification, machine learning, deep learning, CNN

## I. INTRODUCTION

Classification of large satellite imagery is a challenging task for understanding and portraying land cover information. Land cover is the physical land which includes trees, crop fields, barren lands, rivers, forests, etc. Information about land cover is an input for classifying, planning, monitoring and devising ways to use earth resources potentially in greater interest of the human race. This classification is important for various geospatial application like agriculture, environmental and urban management. Accurate and up-to-date information about land cover goes a long way in helping various government and other agencies to update their plans on regular basis. Traditional methods of gathering land cover information are field surveys that are time consuming as well as include much physical labour.

### Existing System

First, although this study used a multi-layered ANN, the initial neural networks only included five input levels and three hidden layers, and they only produced results for a single class. There were six fundamental parameters, each of which had several types. There were 5,000 samples and 100 trees for constructing model classes for six primary parameters: high land, mountains, land area, built-up vegetation, and bare area land.

### Proposed System

Rainforest deforestation is an important issue that causes trees to be cut down to provide more land. It affects oxygen and carbon levels around the world. So we Classify forest land . Which land is better for the crop. It also classify through the our system. We Classify land As per Feature and it will be helpful to environment.

### Deep Learning:

A type of machine learning based on artificial neural networks in which multiple layers of processing are used to extract progressively higher level features from data.

## II.LITERATURE SURVEY

[1]Gourab Patowary,Meenakshi Agarwalla,Sumit Agarwal,Manash Pratim Sarma, : A Lightweight CNN Architecture for Land Classification on Satellite Images ,

Land cover classification using satellite images is an important tool in the study of terrestrial resources. Satellite based information is presently available as huge sets of high resolution images from a large number of satellites like Sentinel, Landsat8, etc.

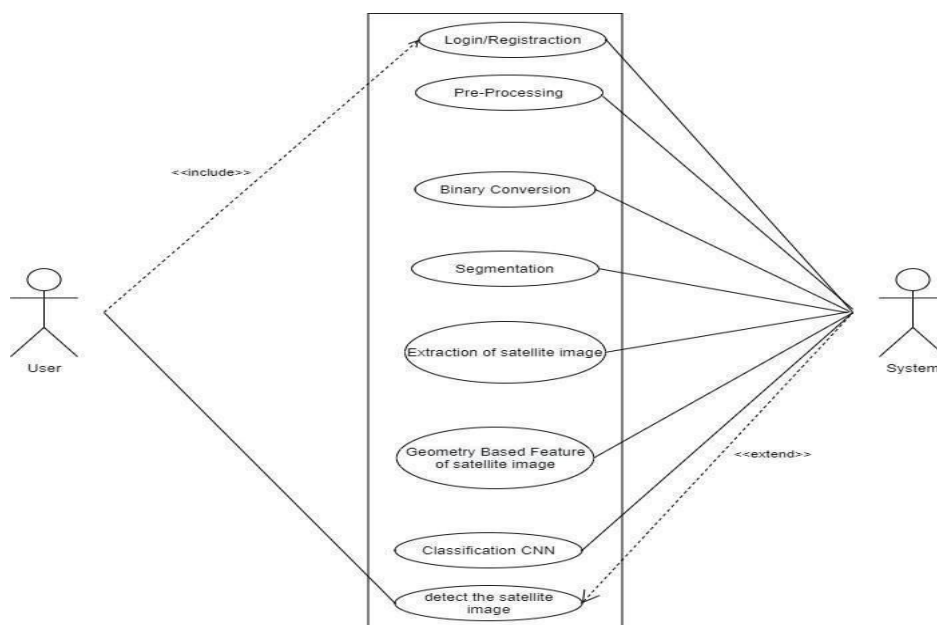
[2]T.Vignesh ,K.K. Thyagarajan,R. Beulah Jeyavathana ,K.V.Kanimozhi,  
Land use and land cover specifies, classifying the land cover areas into various land use and land cover classes. The purpose of land use and land cover classification is that monitoring and identifying the various land cover classes exactly.

[3]A.Wawrzaszek 1,W .Drzewiecki2,M. Krupin´ski1 ,M. Jenerowicz1 ,S. Aleksandrowicz1,MULTIFRACTAL FEATURES FOR LAND USE CLASSIFICATION  
We analyze multifractal parameters for the description and classification of a 2056 subsets of aerial images representing 21 land-use classes. We consider the degree of multifractality, estimated with different capacity measures, as global features characterizing the texture on considered image tiles

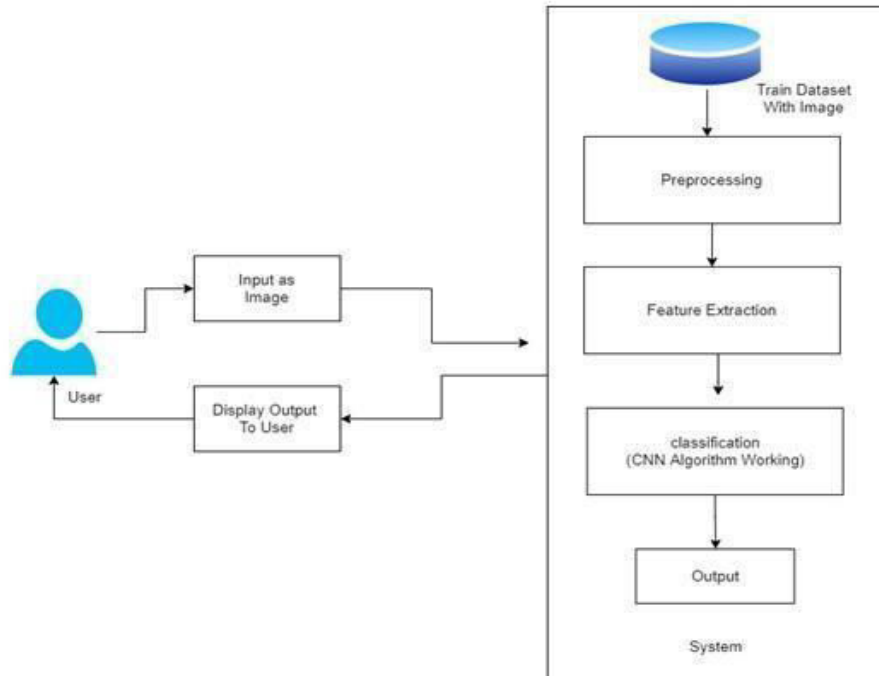
[4] V. H. R. Prudente1,2 ,I. D. Sanches1 ,M. Adami3 ,S. Skakun2 ,L. V. Oldoni1, SAR DATA FOR LAND USE LAND COVER CLASSIFICATION IN A TROPICAL REGION WITH FREQUENT CLOUD COVER  
All available Sentinel-1 images covering the study area were used and classified using two machine learning algorithms, namely random forest and multilayer perceptron. Results show that SAR data could be used for LULC mapping, as rainforest, savannas, water, and sandbank/outcrop classes

[5]Apurva Saksena, Anushka Ringshia, Arnava Sharma, Aparna Halbe,Geographical Area Mapping and Classification Utilizing Multispectral Satellite Imagery Processing Based On Machine Learning Algorithms  
Geographically, a city is characterized as a patchwork of intensive land-uses. Land-use is the rational and judicious approach of allocating available land resources for different activities (such as settlements, arable fields, pastures, and managed woods) within a city. It is a way of utilizing the land, including the allocation, planning, and management of its resources.

### III.METHODOLOGY



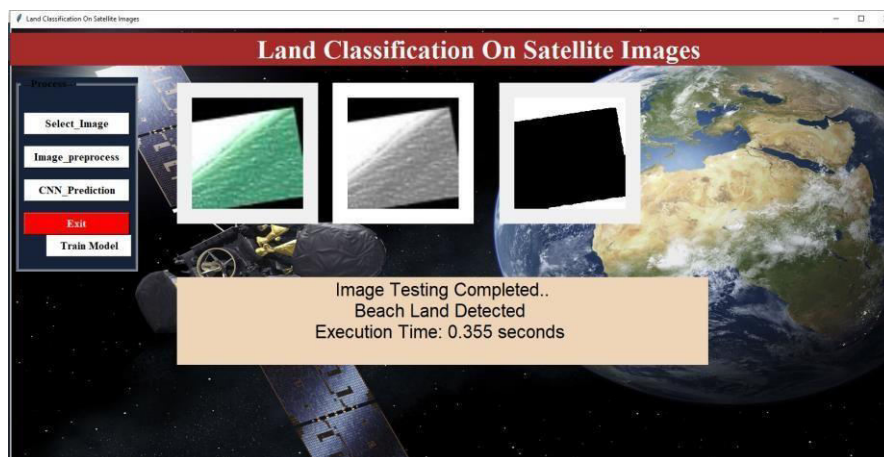
## SYSTEM ARCHITECTURE



### Process

In Data Flow Diagram, we show that flow of data in our system in DFD0 we show that base DFD in which rectangle present input as well as output and circle show our system, In DFD1 we show actual input and actual output of system input of our system is text or image and output is rumor detected like wise in DFD 2 we present operation of user as well as admin.

## IV. EXPECTED RESULT



## V. CONCLUSION

In this project we are concluding the land classification. firstly we get dataset of image then machine will be preprocessing the image means noise and blur part Remove then train images. With CNN algorithm Machine generate



one module then this module put in testing and machine Classify & detect the output.

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**INNO**  **SPACE**  
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