



**ATMIYA
UNIVERSITY**

**DESIGN AND DEVELOPMENT OF A MODEL FOR
CLASSIFICATION AND MAPPING OF LAND
USE/LAND COVER USING MULTI SPECTRAL
SPACE BORN REMOTE SENSING IMAGES**

A

Thesis

Submitted to the
Atmiya University,
For the Degree
of

Doctor of Philosophy
in
COMPUTER SCIENCE

by

Nirav H Desai

Enrolment No. 191881001

Under the Guidance of

Dr. Parag Shukla

Department of Computer Science

**ATMIYA UNIVERSITY,
Yogidham Gurukul, Kalawad Road,
Rajkot-360005, Gujarat (India)**

August, 2023

Introduction

Remote sensing (RS) is the method of discovering and understanding the information from an extensive distance, using sensors deprived of communication with the object. Satellite imagery is pictures of Earth composed by imaging satellites operated by governments and businesses around the world. Land use refers to the biophysical state of the earth's surface where land covers contain grassland, agriculture land and forest. This study performs classification techniques to identify 4 land use land cover classes (Water bodies, Agriculture land, Residential area, Uncultivated land) using deep learning techniques.

Chapter 1 Introduction

This chapter gives an overview of the research work, its scope, objectives, need etc. in detail. Also, the chapter covers remote sensing, types of sensors and different types of remote sensing images. False composite color (FCC) images and image processing techniques and are also covered in this chapter. The summary of the overall thesis is also discussed.

Chapter 2 Literature Review

Study of the previously done work up to now in the area of land use land cover classification and mapping is discussed in this chapter. It contains research articles, electronic documents, conference articles and web resources.

Chapter 3 Methodology

In this chapter, the land use land cover classification model is discussed in detail. Components and subcomponents of the model are explained in detail in this chapter. This chapter also describes the development of the model.

Chapter 4 Results and Conclusion

Design and Development of a Model for Classification and Mapping of Land Use/Land Cover Using Multi Spectral Space Born Remote Sensing Images

This chapter contains outcomes of the projected model applied on IRS LISS- III multispectral image dataset. Furthermore this chapter presents conclusion of projected study work.

Conclusion

Results and conclusion are deliberated in detail in chapter 4 built on various parameters. This chapter presented the outcomes related to the numerous proposed models.