CENTRE OF EXCELLENCE IN MULTIMEDIA SIGNAL PROCESSING (COEMSP)

Research Project: **"Design of an algorithm for urban feature extraction and classification for satellite image" (2019-21)**

Funding Agency: Indian Space Research Organisation (ISRO), Department of Space, Government of India, Antariksh Bhavan , Bengaluru, India

Project details:

Objectives:
1. To develop an algorithm for feature extraction of buildings, roads, and other urban regions for satellite image.
2. To develop an algorithm for effective classification of a region of interest from satellite image upto Level-3.

The Satellite images need to be processed in following steps:

Feature extraction → Feature selection → Classification.

The feature extraction should be efficient and useful region descriptors and representation. The extracted features should provide useful and relevant attributes from different local image regions. The selection of feature values should produce the compact set and must provide the feature vector used for classification of urban features like buildings, roads etc. The classifier need to be designed for classification of urban areas into different classes for dynamic changes in satellite image upto Level-3.

Principle Investigator: Dr. Hetal N. Patel, PhD(EC), Professor and Head, EC Department

Junior Research Fellow: Ms. Jyoti Shukla, BE(EC), Gate score=373

A D PATEL INSTITUTE OF TECHNOLOGY
ISO 9001:2015 (A Constituent College of CVM University)

B/h. IV Phase, G.I.D.C. Vitthal Udhyognagar, New Vallabh Vidyanagar – 388121
02692 – 233680 | info@adit.ac.in, principal@adit.ac.in | www.adit.ac.in
NBA Accreditation in Food Processing Tech., Mechanical Engg., Information Tech., Electrical Engg. upto 30/06/2022

Team members (Students) working on the project:

Enrolment no.	Name of the student	Year of Passing	CGPA/CPI	Contribution
160010116037	Harsh Patel	2020	8.73	Developed the code for Buitup area classification using CNN
180010107048	Rajak Rupakkumar	Currently studying in Third year CP	8.40	Design GUI (Graphical User Interface) for Buitup area classification using CNN. The GUI is submitted to ISRO on 28/12/2020
170010111021	Reshi Amanjeet	Currently studying in Fourth year EC	9.52	Design of an algorithms for Urban area classification upto Level-1
170010111023	Singh Shivangi	Currently studying in Fourth year EC	9.71	

Facilities built up/augmentation at Institute for Space related activities (Lab, Equipment, software etc.) till date:

High performance GPU Based Workstation, High speed internet connectivity, Data storage devices (External Hard disks), Printer

Paper publication:

- Jyoti Shukla, Kirti Rastogi, Hetal Patel ,Gaurav Jain and Shashikant Sharma, "Bag of Visual Words Methodology in Remote Sensing – A Review", International e-Conference on Intelligent Systems and Signal Processing (e-ISSP 2020) , 29th -30th December,2020.

A D PATEL INSTITUTE OF TECHNOLOGY
ISO 9001:2015 (A Constituent College of CVM University)
B/h. IV Phase, G.I.D.C. Vitthal Udhyognagar, New Vallabh Vidyanagar – 388121
02692 – 233680 | info@adit.ac.in, principal@adit.ac.in | www.adit.ac.in
NBA Accreditation in Food Processing Tech., Mechanical Engg., Information Tech., Electrical Engg. upto 30/06/2022