**A Report On**

An Offline EO Data processing Challenge  
using Open source packages

Automatic CLOUD and SHADOW mask generation

from Resourcesat-2/2A Liss4 Satellite Images

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1. Objective

Briefly state the goal of the project.

2. Dataset Description

To Include:

Data set Ids (e.g.Resourcesat-2/2A)

Number of samples: train, validation, test

Preprocessing steps (DNto TOA , normalization, sun angle correction )

3. Model Architecture / Algorithm Pipeline

Details of your methodology / model being used :

If and as applicable

Number and types of layers (Conv, Pooling, FC)

Activation functions

Use of transfer learning (e.g., ResNet, VGG16)

Total parameters

Optional: Include a diagram or table of model architecture.

4. Training Configuration( if applicable) , Assumptions and Constraints

Framework used (TensorFlow, PyTorch, etc.)

Loss function

Optimizer (e.g., Adam, SGD)

Learning rate

Number of epochs

Batch size

Hardware used (CPU/GPU)

5. Resources used ( compute Hardware and software packages )

OS , CPU, RAM ,…

Open source packages / COTS packages

5. Evaluation Metrics

Classification: Accuracy, Precision, Recall, F1-Score, Confusion Matrix

6. Results

a. Quantitative

Metric values on test set

Table of class-wise performance

Confusion matrix

b. Visual Outputs

Sample predictions vs. ground truth

Heatmaps or Class Activation Maps (CAM)

Overlay masks (for segmentation tasks)

c. Model training graphs on training

7. Analysis

Insights: Which classes performed well/poorly?

Common errors (misclassifications, false positives)

Overfitting/underfitting evidence (training vs. validation loss curves)

Comparison with baseline models (if any)

8. Conclusion and future improvements

Summary of performance

Suitability for deployment/use

Limitations