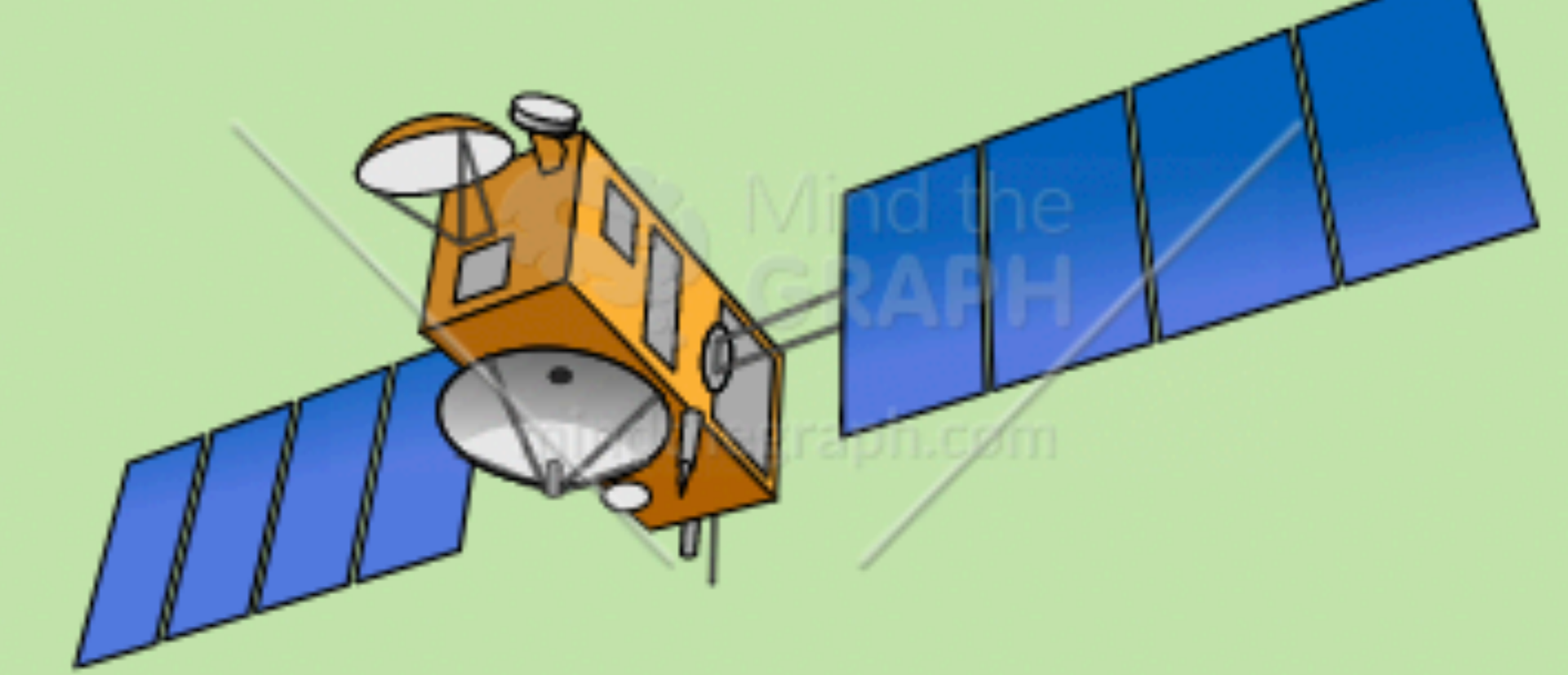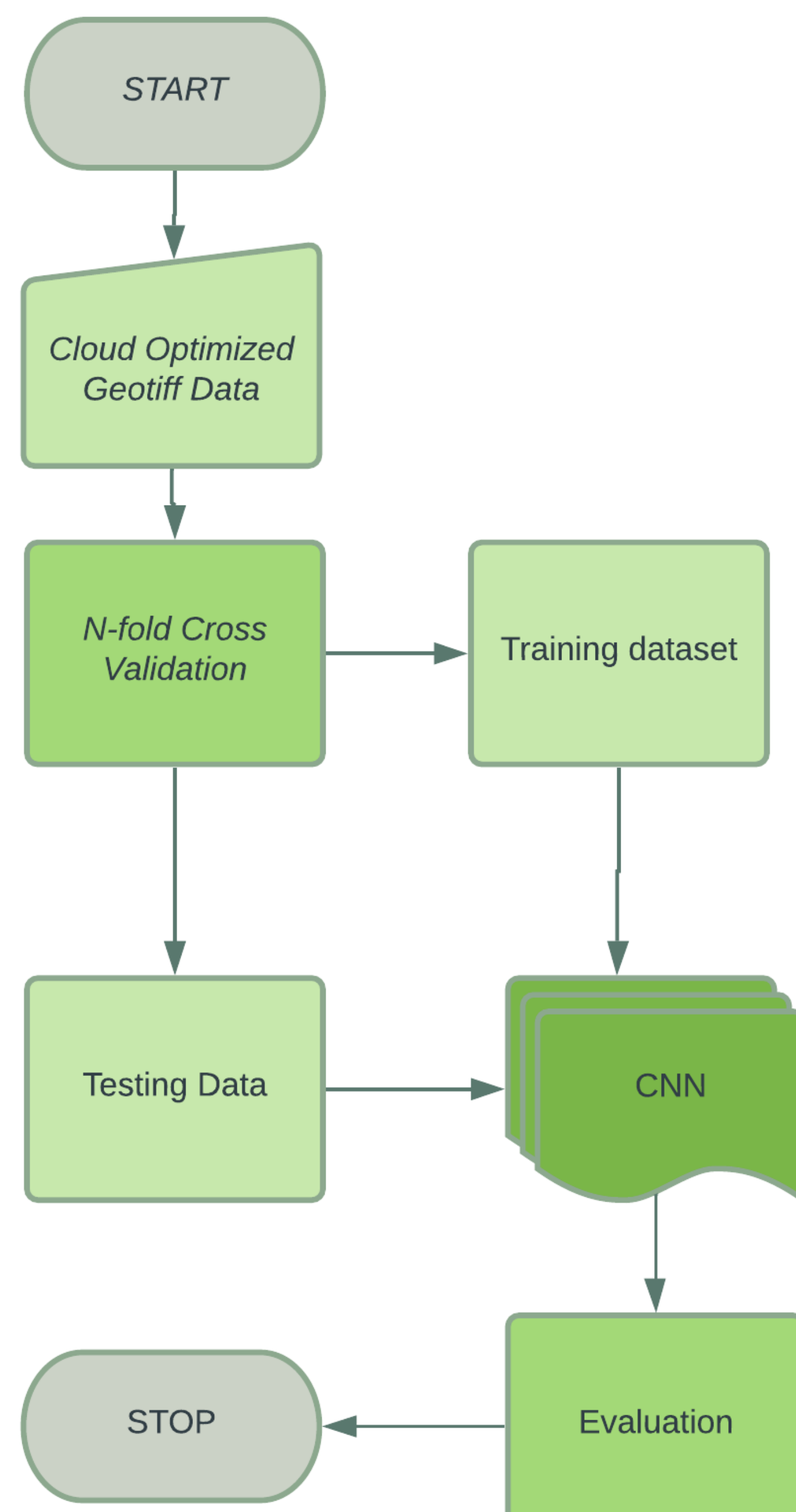# SATELLITE DATA ANALYSIS FOR FOREST DETECTION
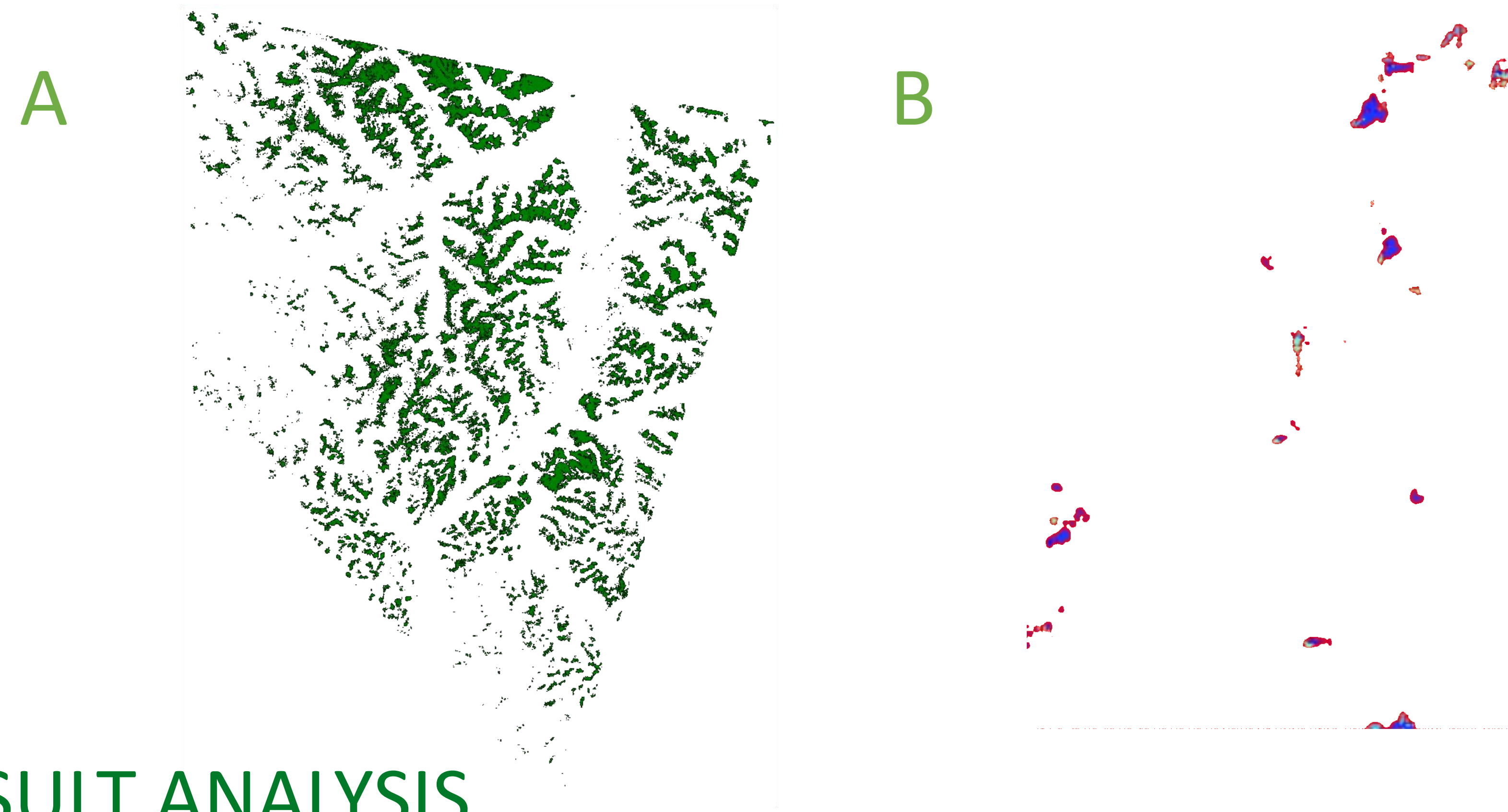
INTRODUCTION

* How can we automatically distinguish forest areas from rest of the Landcover in a Sentinel-2 scene of BC & hence determine which bands provides better accuracy?

* Sentinel-2 consists of 2 satellites with multispectral imager.This sensor delivers 13 spectral bands, each of 10, 20 or 60 meters in pixel size.

SYSTEM DESIGN

START

↓

Cloud Optimized Geotiff Data

↓

N-fold Cross Validation → Training dataset

↓

Testing Data → CNN

↓

STOP ← Evaluation

PREDICTED CLASSIFIED IMAGES

A

B

* To the left are predicted BC images of A) unsupervised learning model and B)Supervised learning model (CNN), where the regions in green and blue represent forest areas.

* With epochs >200 the model ran with accuracy of 75.37% for bands 2,3,4.
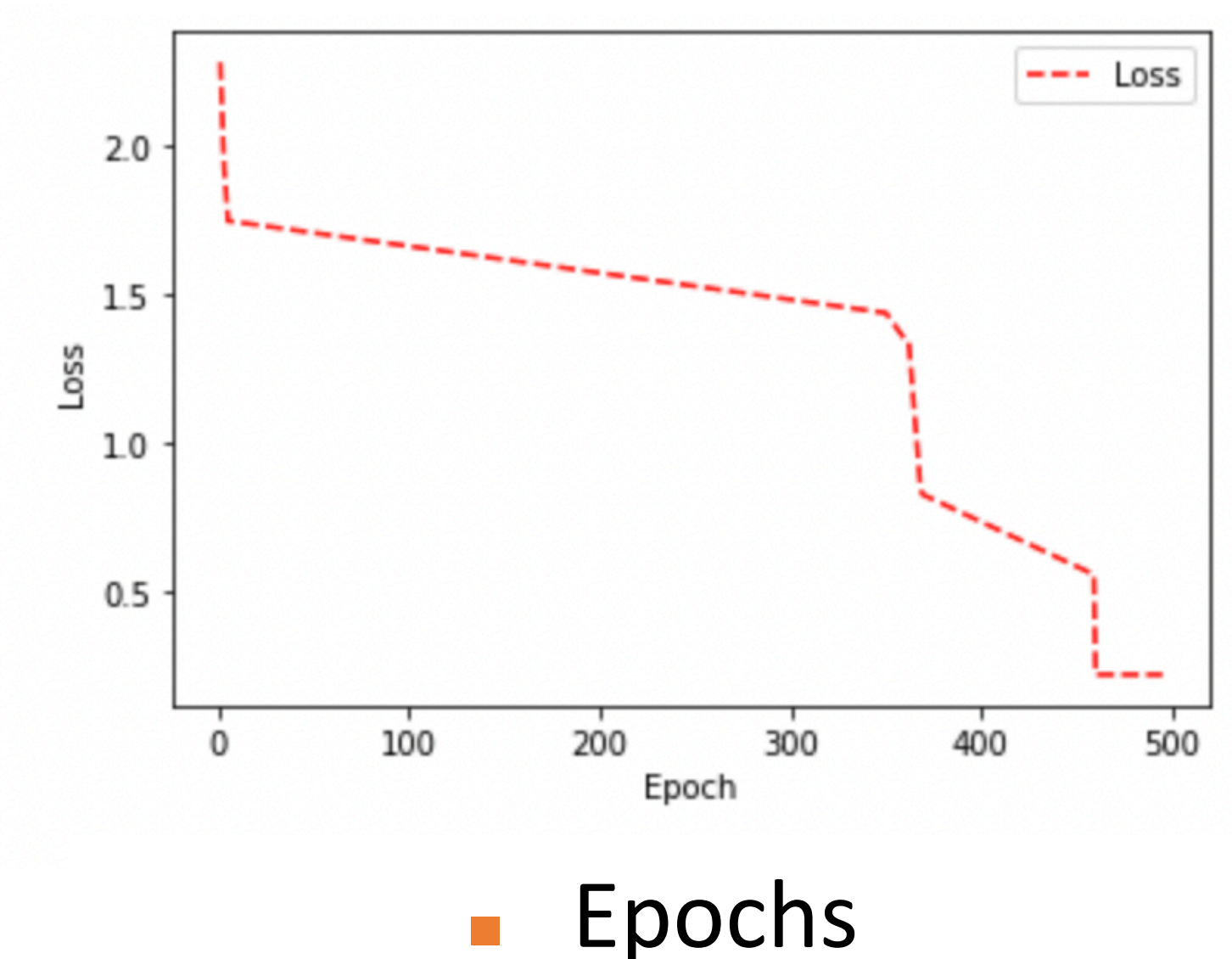
RESULT ANALYSIS

Accuracy vs Bands

0.76

Accuracy

0.68

B(2,3,4)   B(12,8A,4)

■ Sentinel-2 Bands
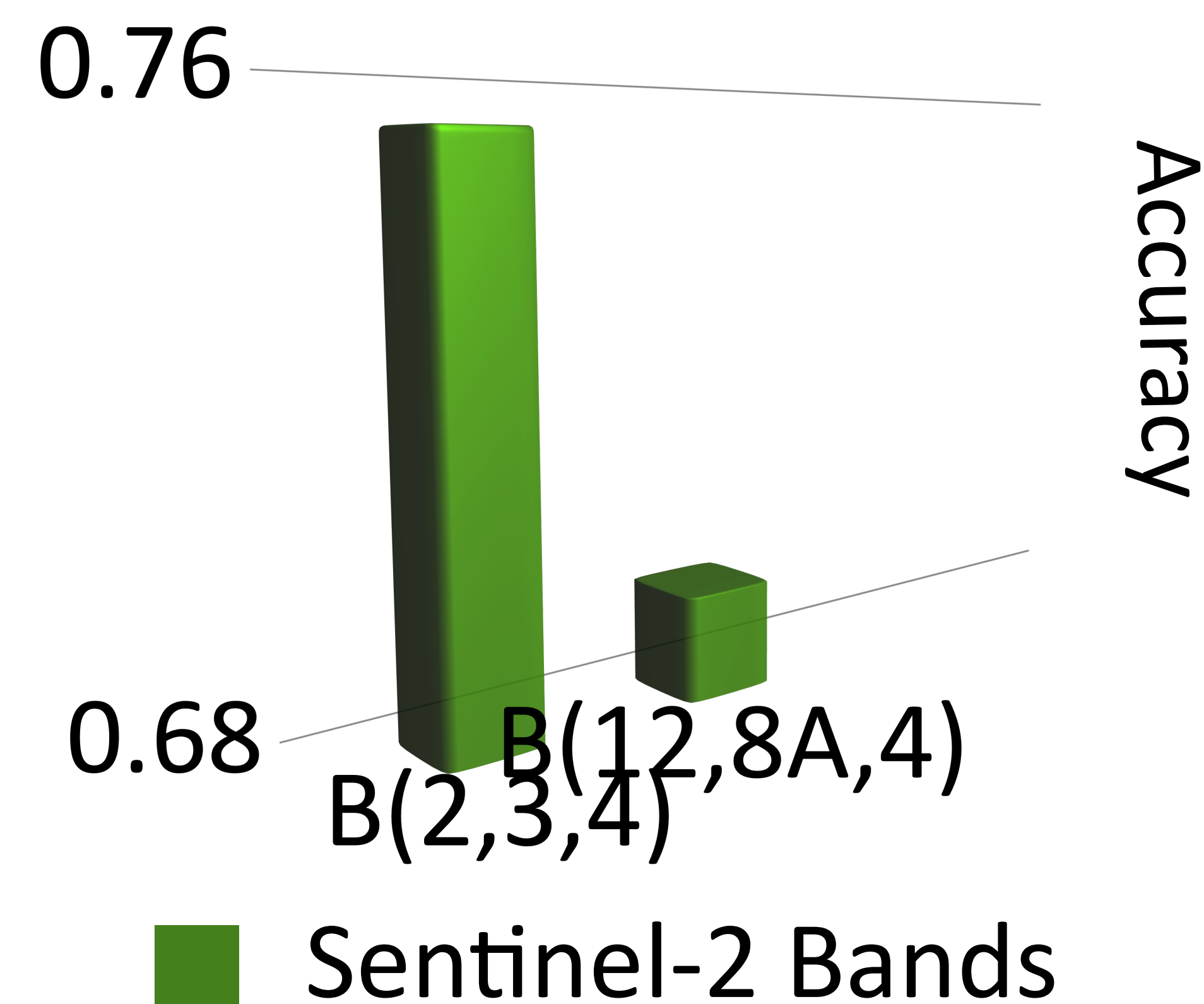
Training Accuracy vs Epochs
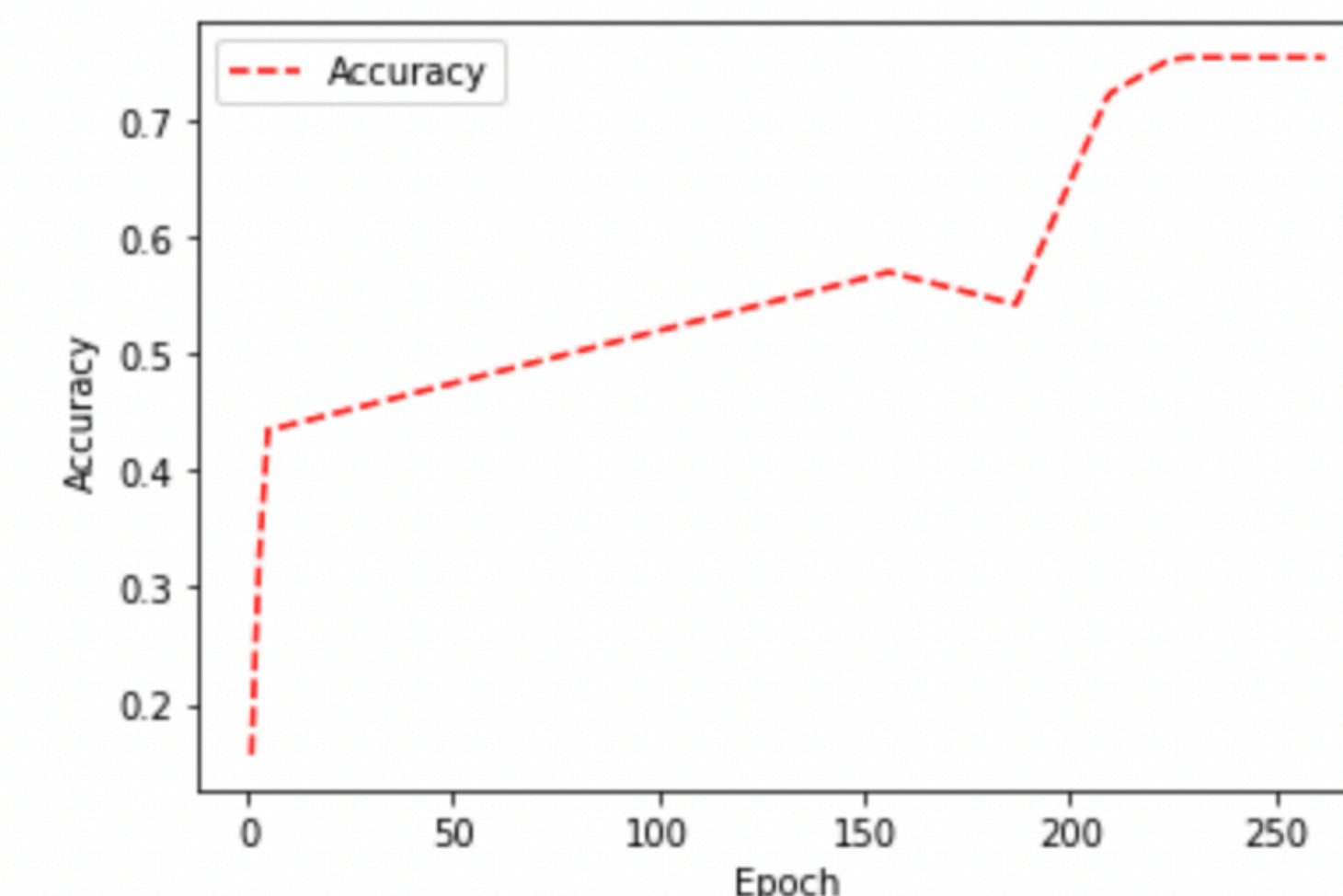
Loss vs Epochs

■ Epochs

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