APPENDICES

Appendix 1. Code Snippet of Pixel-based Classification with RF

```
var classifier_alg = "RF"
if (classifier_alg == "RF") {
    var classifier =
ee.Classifier.smileRandomForest({
        numberOfTrees: 50,
        minLeafPopulation: 1,
        bagFraction: 0.4}).train({
        features: training,
        classProperty: 'class',
        inputProperties: bandsName
    });
}
```

Appendix 2. Code Snippet of Pixel-based Classification with SVM

```
var classifier_alg = "SVM"
else if (classifier_alg=="SVM") {
     var classifier = ee.Classifier.libsvm({
       kernelType: 'RBF',
       cost: 1000,
       gamma: 0.1}).train({
         features: training,
         classProperty: 'class',
         inputProperties: bandsName
       });
}
```

Appendix 3. Code Snippet of Object-based Classification with SNIC and RF

```
var segmentation_alg = "SNIC"
if (segmentation_alg == "SNIC") {
    var size_seeds = 4
    varseeds =
ee.Algorithms.Image.Segmentation.seedGrid(size_se
eds);
    var segmentation =
ee.Algorithms.Image.Segmentation.SNIC({
        image: normalized_image,
        compactness: 0,
        connectivity: 8,
        neighborhoodSize: 128,
        seeds: seeds
    })
}
```

```
…
…
var classifier_alg = "RF"
if (classifier_alg == "RF") {
   var classifier =
ee.Classifier.smileRandomForest({
        numberOfTrees: 200,
        minLeafPopulation: 1,
        bagFraction: 0.6}).train({
        features: training_geobia,
        classProperty: 'class',
        inputProperties: predictionBands
    });
}
```

Appendix 4. Code Snippet of Object-based Classification with SNIC and SVM

```
var segmentation_alg = "SNIC"
if (segmentation_alg == "SNIC") {
    var size_seeds = 4
    varseeds =
ee.Algorithms.Image.Segmentation.seedGrid(size_se
eds);
    var segmentation =
ee.Algorithms.Image.Segmentation.SNIC({
        image: normalized_image,
        compactness: 0,
        connectivity: 8,
        neighborhoodSize: 128,
        seeds: seeds
    })
}
…
…
var classifier_alg = "SVM"
if (classifier_alg == "SVM") {
    var classifier = ee.Classifier.libsvm({
        kernelType: 'RBF',
        gamma: 1,
        cost: 100}).train({
        features: training_geobia,
        classProperty: 'class',
        inputProperties: predictionBands
    });
}
```

Appendix 5. Code Snippet of Object-based Classification with G-Means and RF

```
var segmentation_alg = "G-Means"
if (segmentation_alg == "GMeans") {
    var segmentation =
ee.Algorithms.Image.Segmentation.GMeans({
        image: normalized_image,
        numIterations: 10,
        gridSize: 4
    })
}
…
…
var classifier_alg = "RF"
if (classifier_alg == "RF") {
   var classifier =
ee.Classifier.smileRandomForest({
        numberOfTrees: 50,
        minLeafPopulation: 1,
        bagFraction: 0.8}).train({
        features: training_geobia,
        classProperty: 'class',
        inputProperties: predictionBands
    });
}
```

Appendix 6. Code Snippet of Object-based Classification with G-Means and SVM

```
var segmentation_alg = "GMeans"
if (segmentation_alg == "GMeans") {
    var segmentation =
ee.Algorithms.Image.Segmentation.GMeans({
        image: normalized_image,
        numIterations: 10,
        gridSize: 4
    })
}
…
…
var classifier_alg = "SVM"
```

```
if (classifier_alg == "SVM") {
    var classifier = ee.Classifier.libsvm({
        kernelType: 'SIGMOID',
        gamma: 0.1,
        cost: 1000}).train({
        features: training_geobia,
        classProperty: 'class',
        inputProperties: predictionBands
    });
}
```

Appendix 7. Source Code

The full code can be accessed via the GitHub repository provided below. However, full access is only available upon direct request to the author. For more information or access requests, please contact the author.

Link: https://github.com/losinanda/Undergaduate_Thesis_Source_Code

BIOGRAPHY

Kadek Losinanda Prawira was born in Singaraja on January 29, 2003. The author is an Indonesian citizen and Hindu. The author now lives in Baktiseraga Village, Buleleng District, Buleleng Regency. The author completed his elementary education at SD Negeri 3 Banjar Jawa and graduated in 2015. Then, the author continued his education at SMP Negeri 1 Singaraja and graduated in 2018. In 2021, the author graduated from SMA Negeri 1 Singaraja. The author is registered as a student of the Computer Science Undergraduate Study Program at Universitas Pendidikan Ganesha from 2021 until the writing of this undergraduate thesis.