Lab in Earth Engine: Unsupervised (K-means) image analysis in Google Earth Engine – Kate Alison

Link to the code in Google Earth Engine:

https://code.earthengine.google.com/76b2501d35fcf8c0509e46f7e4ed9eae

```
var Dubai =
    /* color: #d63000 */
    /* shown: false */
    /* displayProperties: [
      {
        "type": "rectangle"
      }
    ] */
    ee.Geometry.Polygon(
        [[[55.25107984413207, 25.218326927334207],
          [55.25107984413207, 25.160541442818463],
          [55.38291578163207, 25.160541442818463],
          [55.38291578163207, 25.218326927334207]]], null, false);
```

// import the satellite data from the European Space Agency

var S2 = ee.ImageCollection("COPERNICUS/S2");

//filter for Dubai

S2 = S2.filterBounds(Dubai);

print(S2);

//filter for date

S2 = S2.filterDate("2020-01-01", "2020-05-11");

print(S2);

var image = ee.Image(S2.first());

print(image)

Map.addLayer(image,{min:0,max:3000,bands:"B4,B3,B2"}, "Dubai");

Map.addLayer(image,{min:0,max:3000,bands:"B8,B4,B3"}, "Dubai");

// Create training dataset.

var training = image.sample({

 region: Dubai,

 scale: 20,

```
  numPixels: 5000
});

// Start unsupervised clusterering algorithm and train it.
var kmeans = ee.Clusterer.wekaKMeans(5).train(training);
// Cluster the input using the trained clusterer.
var result =  image.cluster(kmeans);
// Display the clusters with random colors.
Map.addLayer(result.randomVisualizer(), {}, 'Unsupervised K-means Classification');

// Export the image to Drive
Export.image.toDrive({
  image: result,
  description: 'kmeans_Dubai',
  scale: 20,
  region: Dubai
});
```