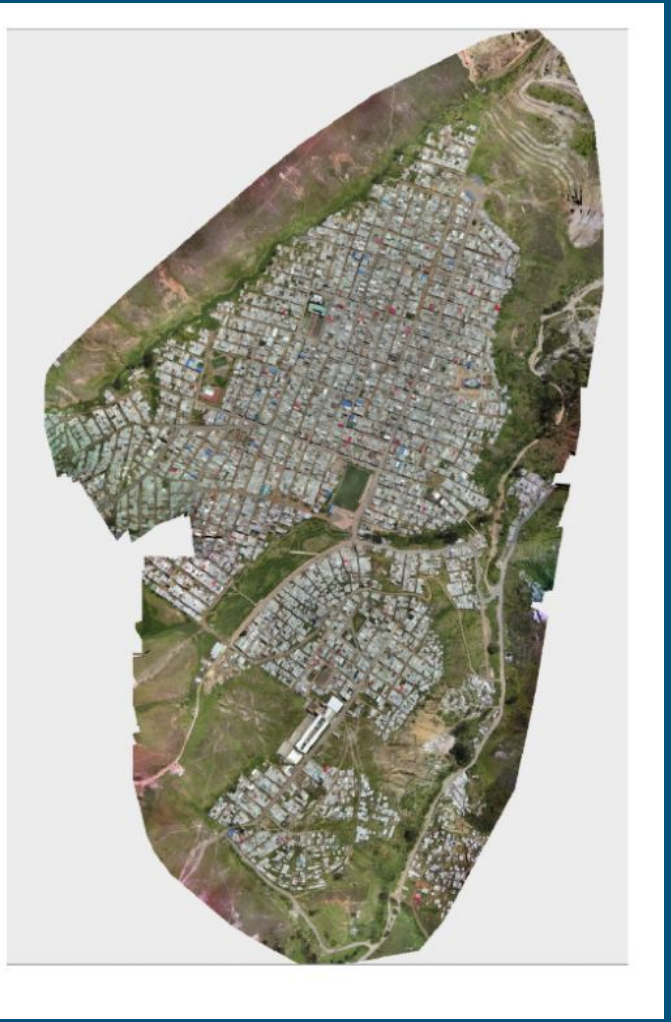
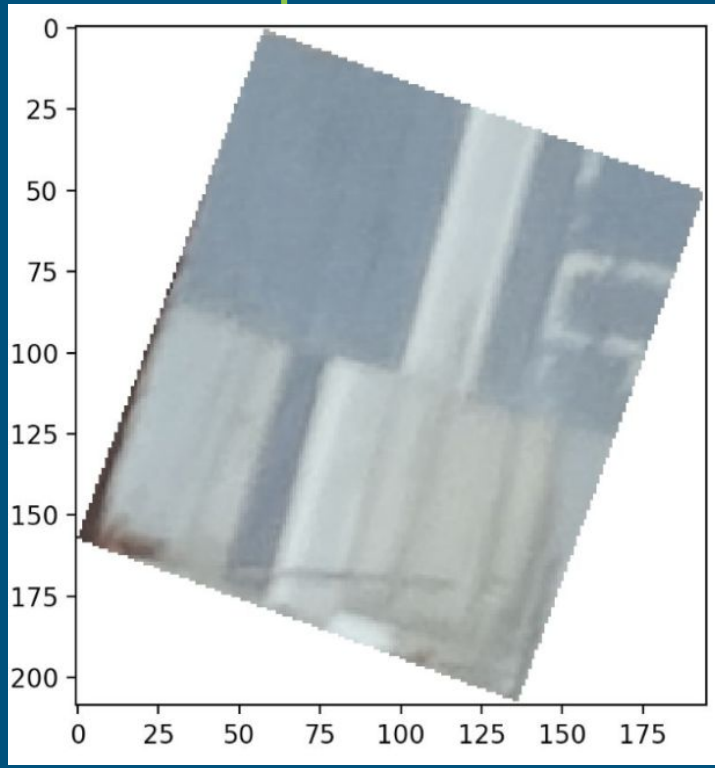
Natural Disaster Risk Assessment

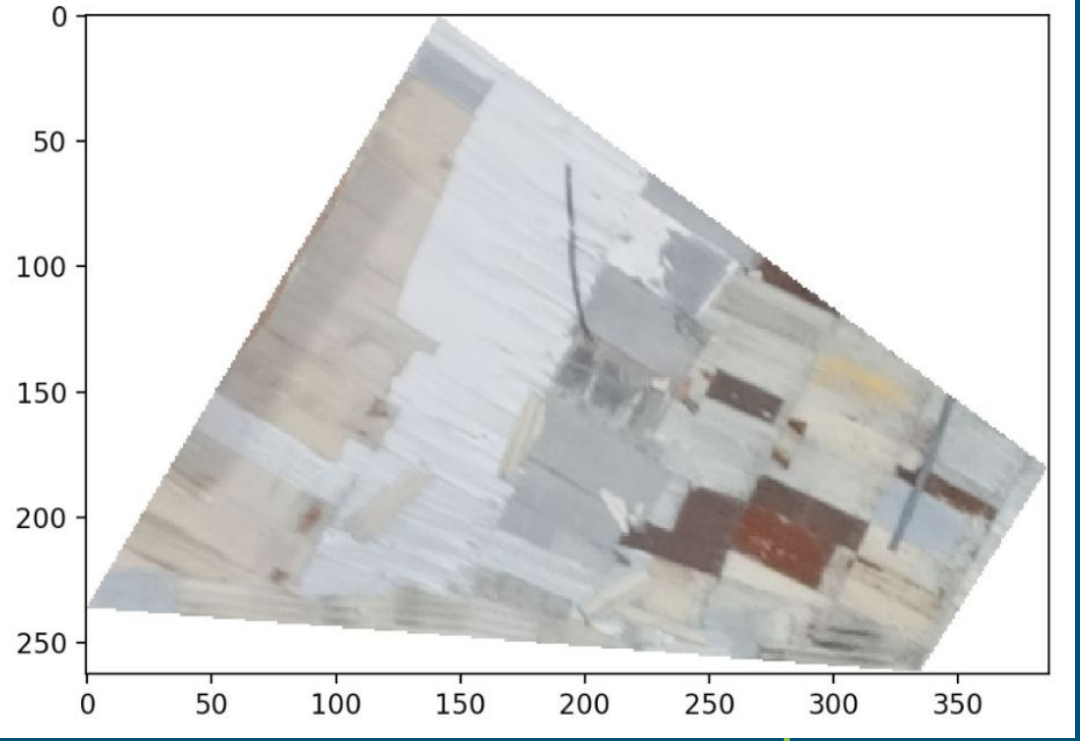
Tammy Glazer + James Jensen

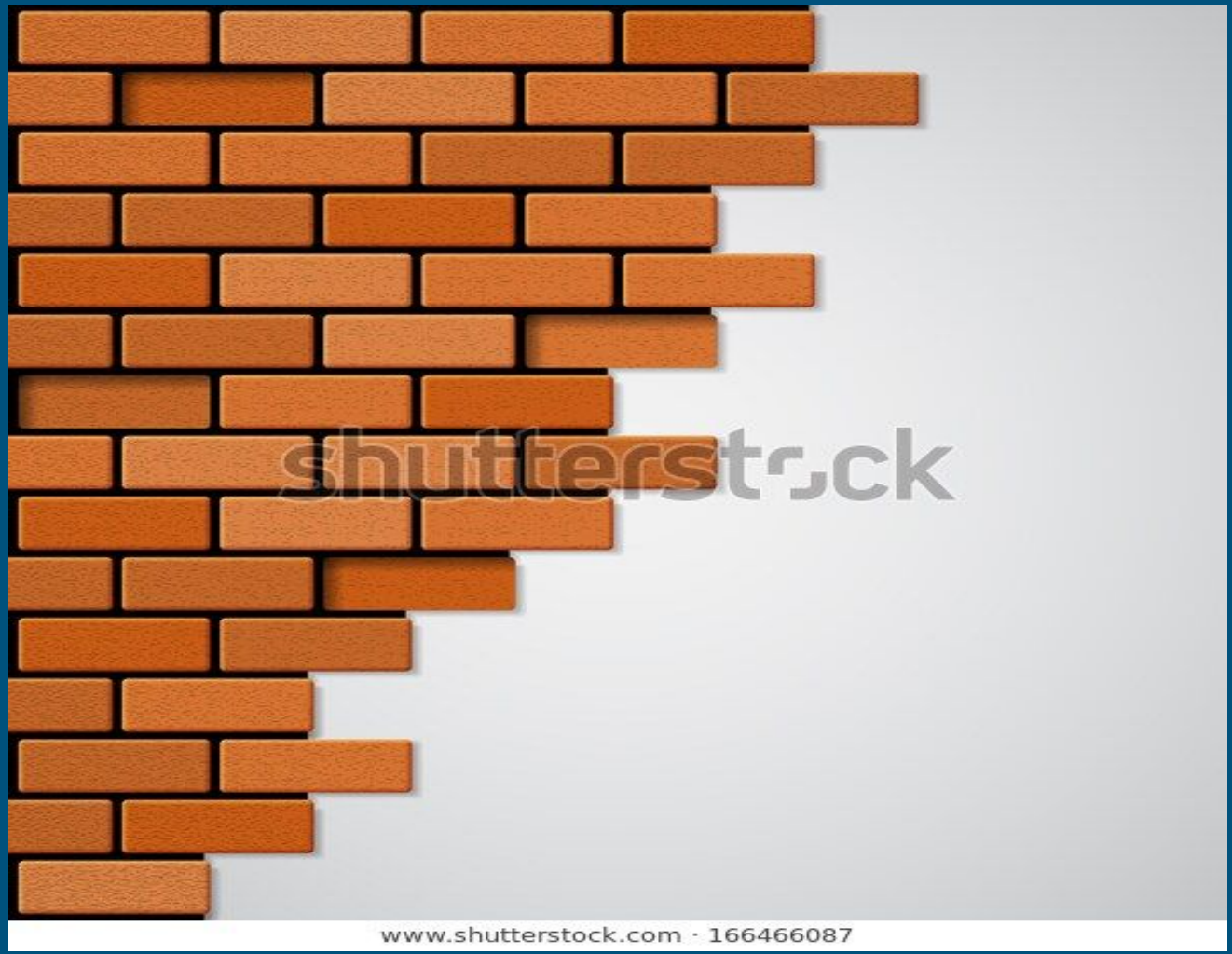
Overview

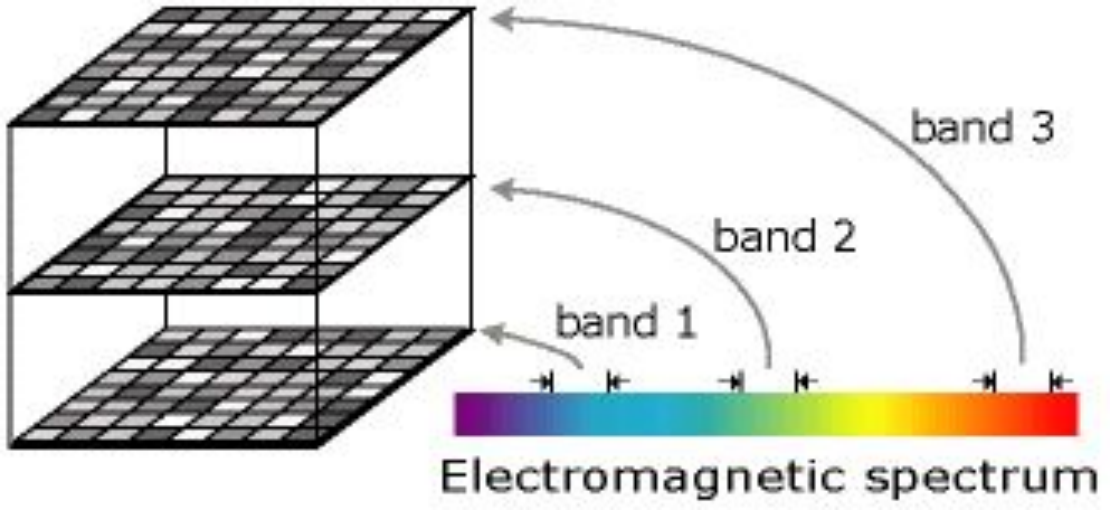
1. Goal (Unsupervised vs. Supervised)
2. Data (TIF + Raster)
3. Current Results
4. Next Steps

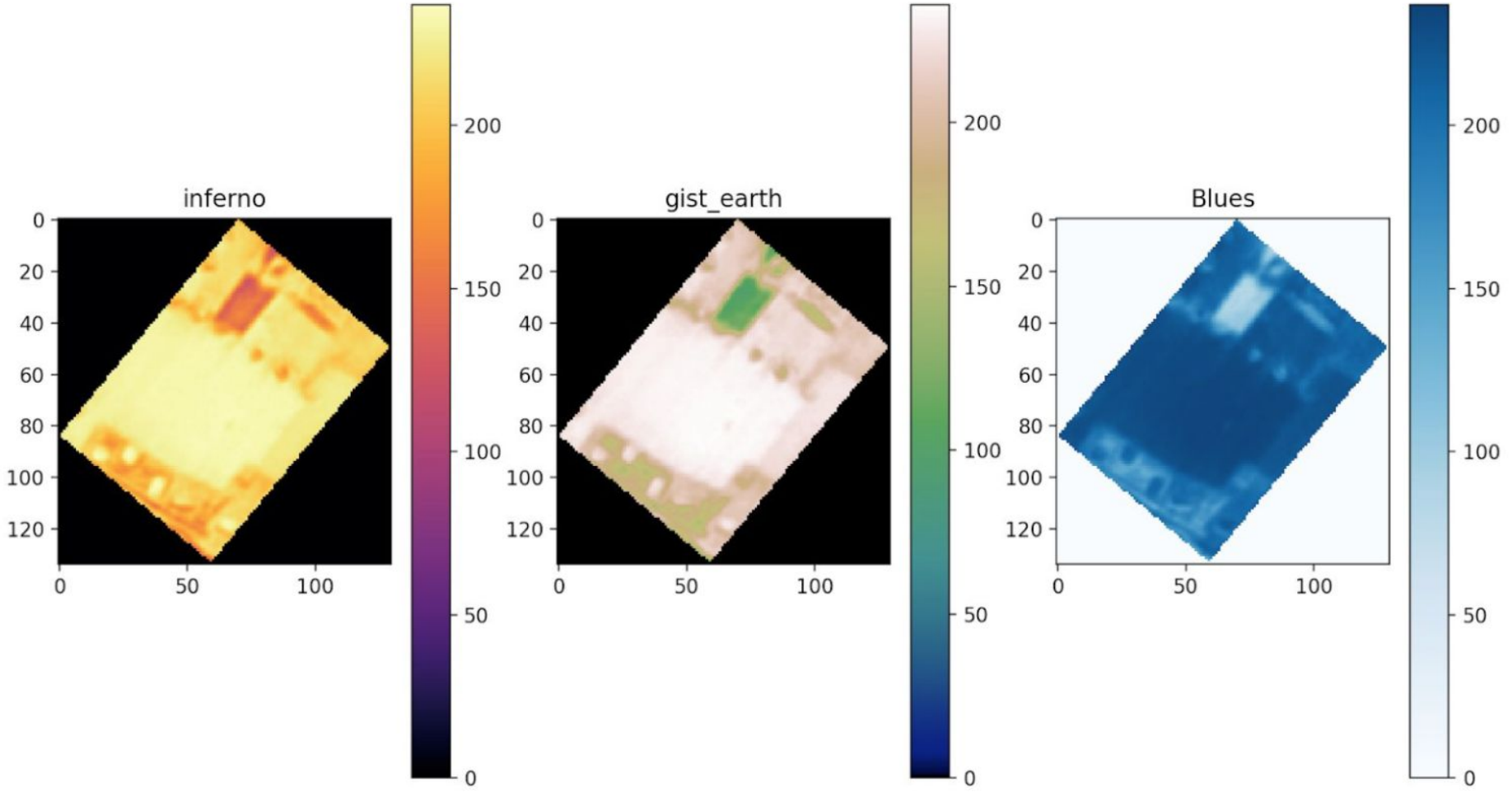


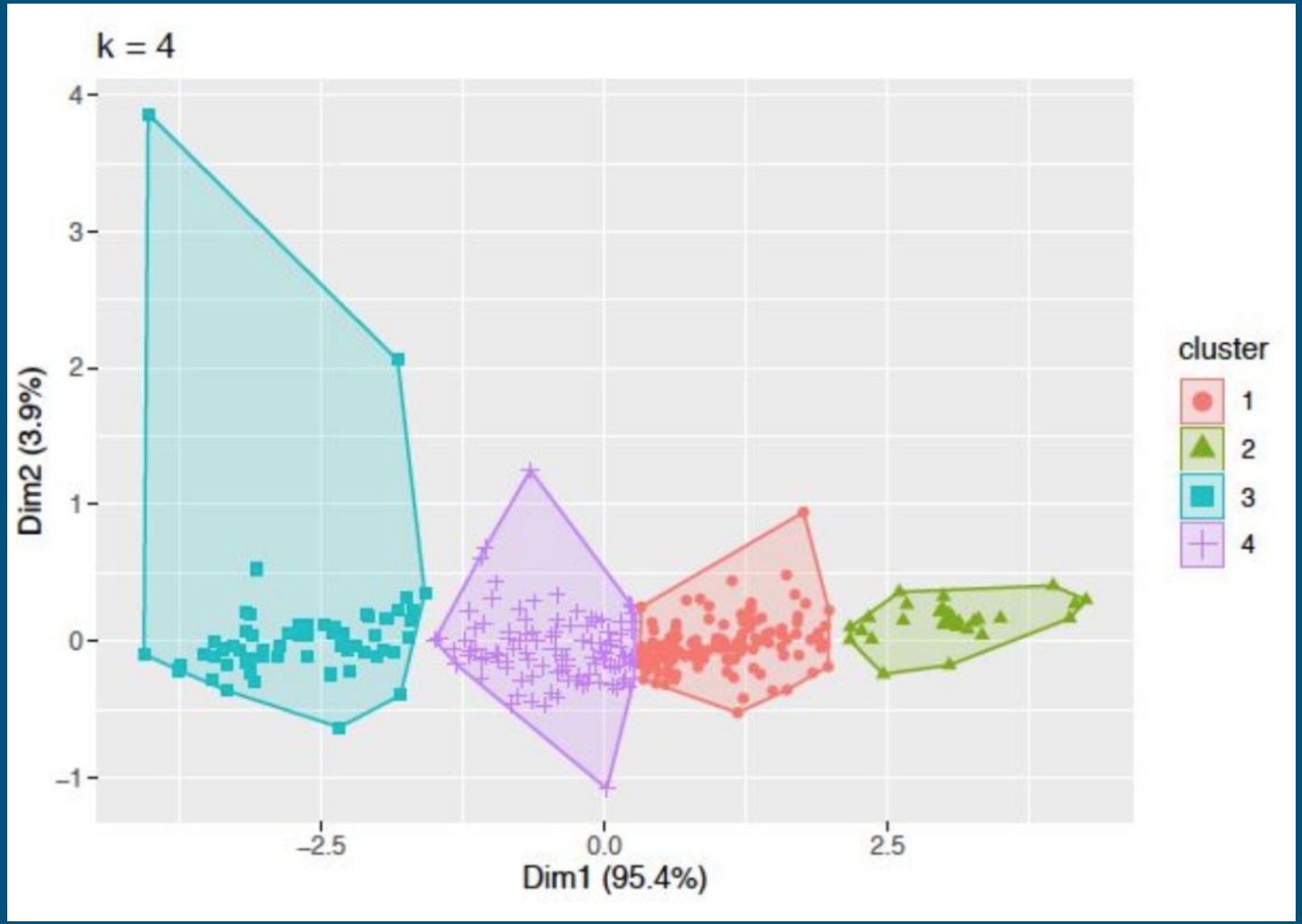

0
25
50
75
100
125
150
175
200
0
25
50
75
100
125
150
175

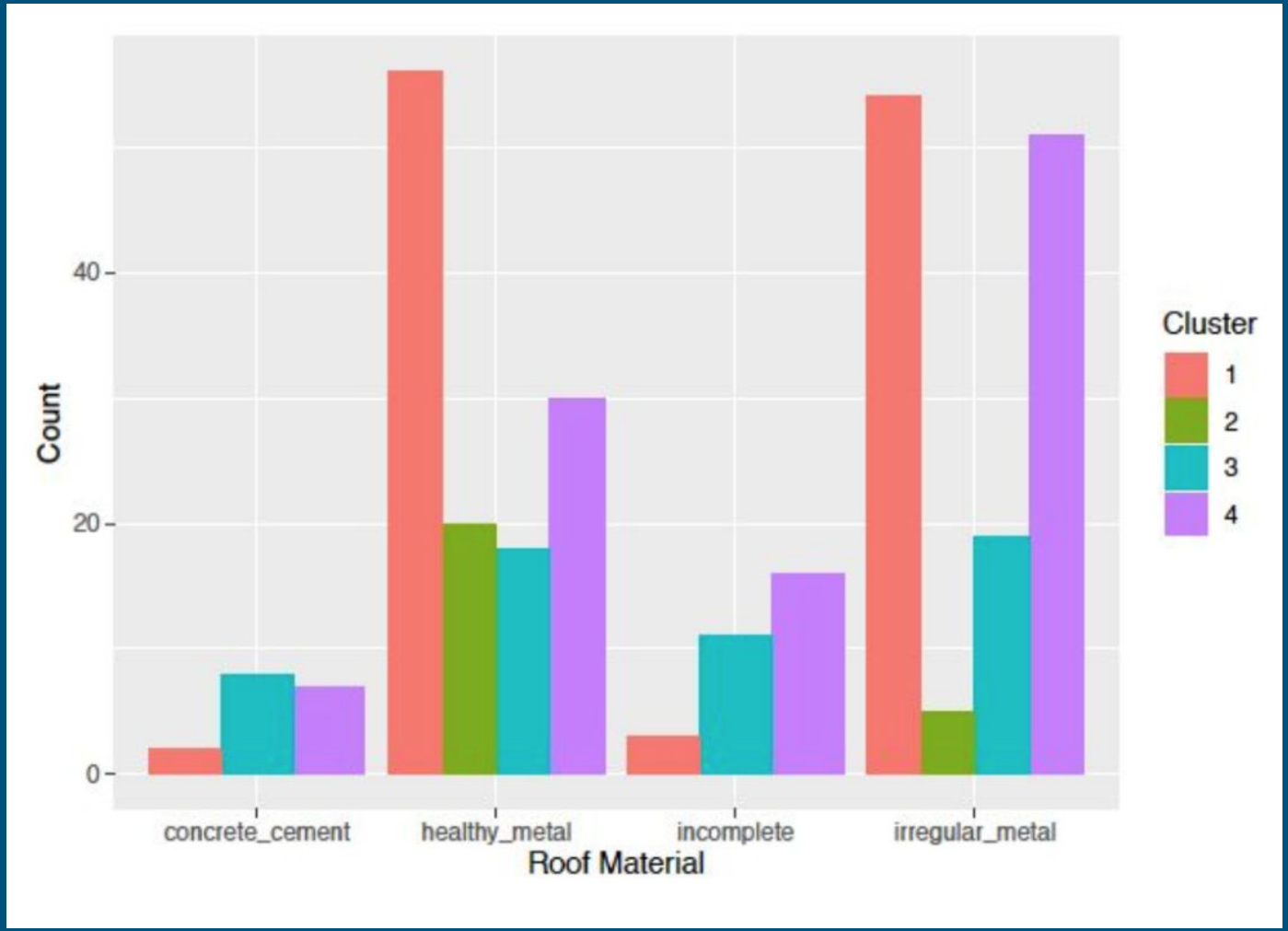

0
50
100
150
200
250
0
50
100
150
200
250
300
350


shutterstock
www.shutterstock.com · 166466087


band 3
band 2
band 1
Electromagnetic spectrum


inferno
gist_earth
Blues
0
20
40
60
80
100
120
0
50
100
0
50
100
150
200

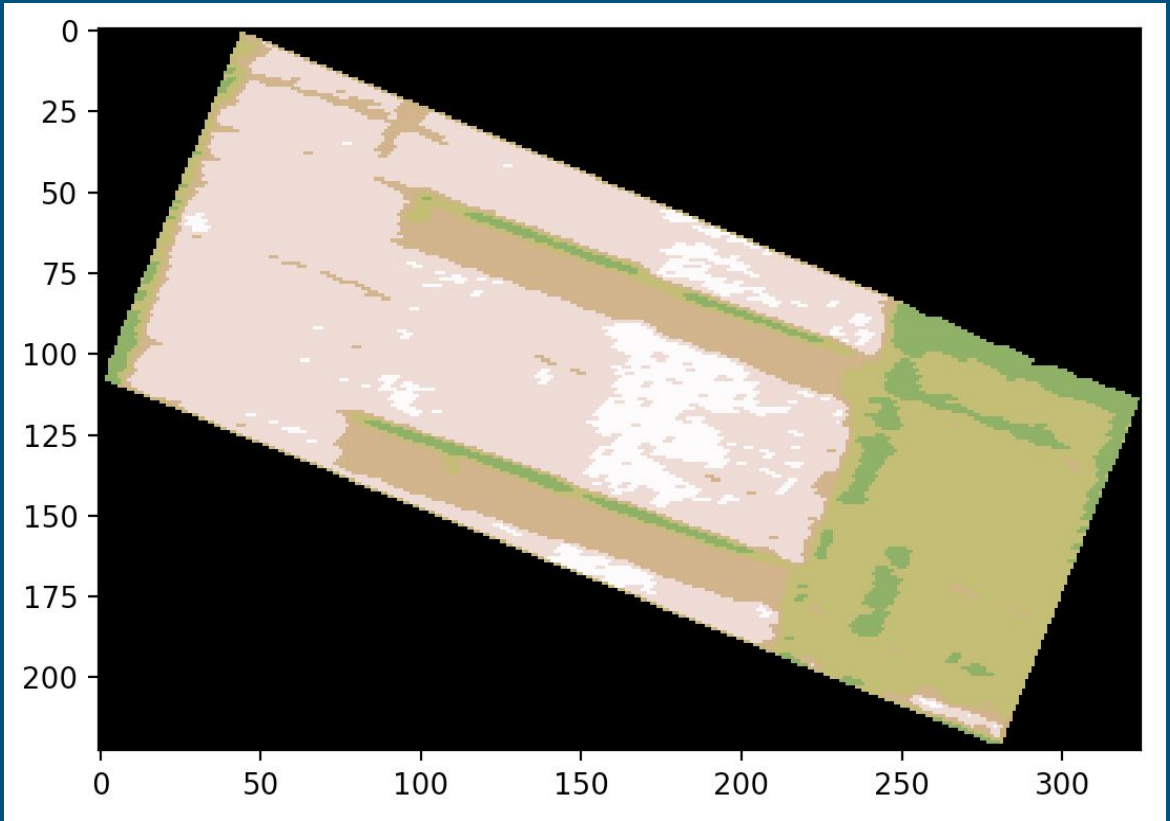
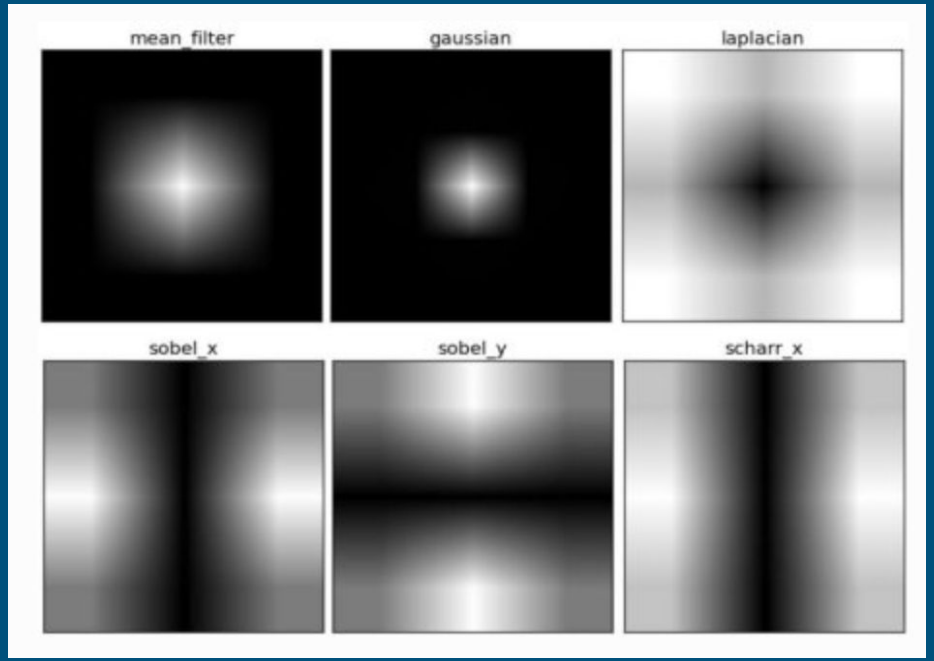

k = 4
4
3
2
1
0
−1
Dim2 (3.9%)
−2.5
0.0
2.5
Dim1 (95.4%)
cluster
1
2
3
4


Count
40
20
0
concrete_cement
healthy_metal
incomplete
irregular_metal
Roof Material
Cluster
1
2
3
4

Next Steps

1. Additional Data Processing (Image Patching / Rejection Sampling / 64x64 pixel image)
2. Random Fourier Features
3. Internal Validation

Color Quantization via K-Means Clustering



2D Discrete Fourier Transform