

Texture Integrated Classification to Detect Urban Forest Canopy In Portland, Oregon

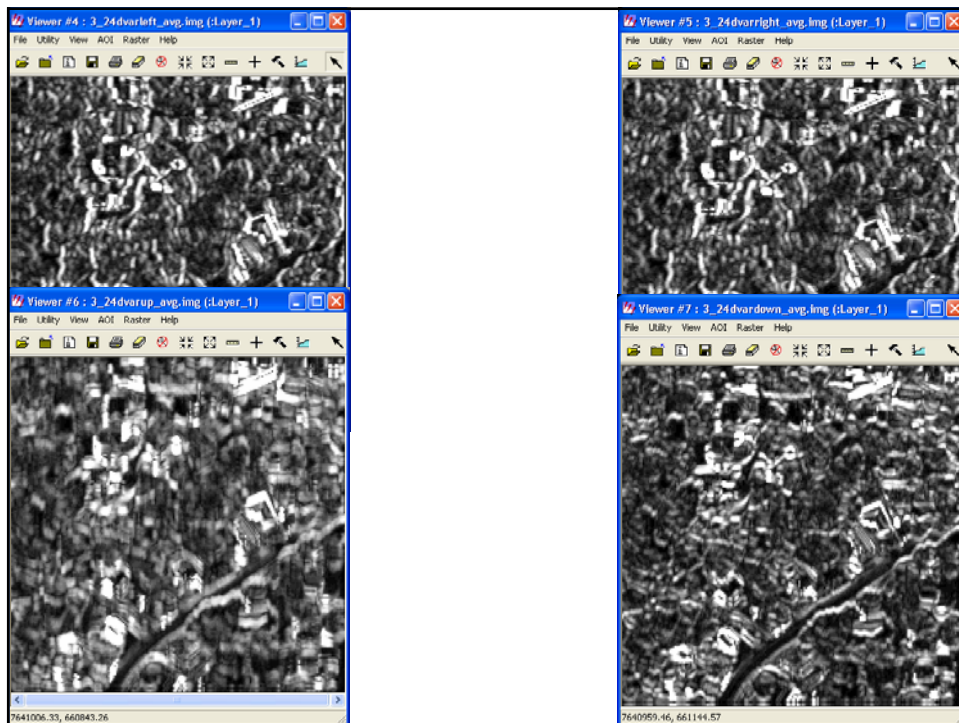
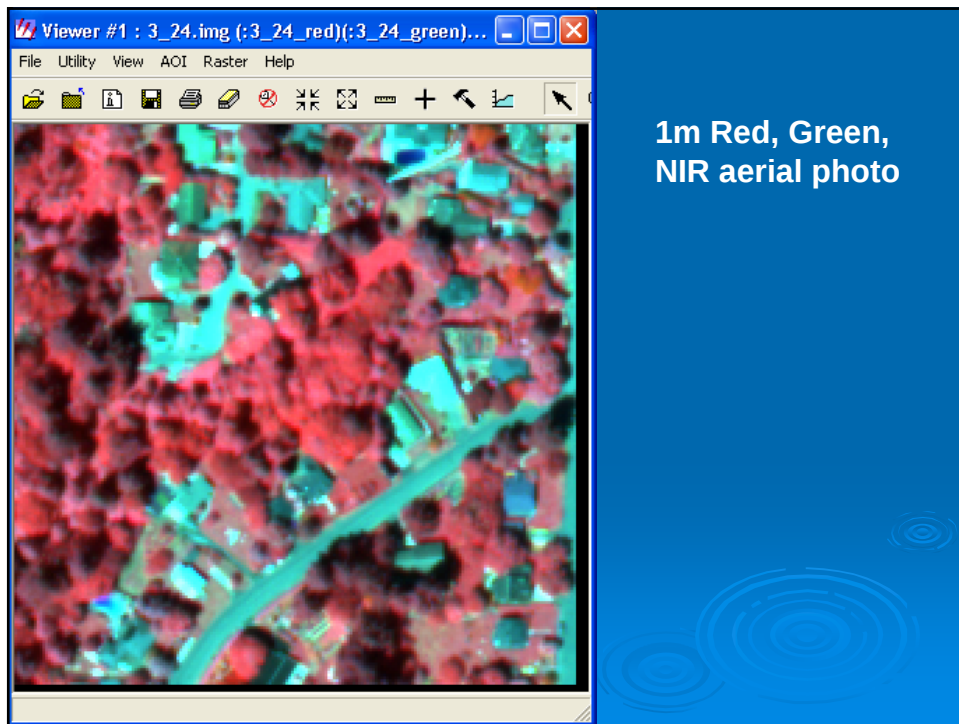
Shane Metcalf

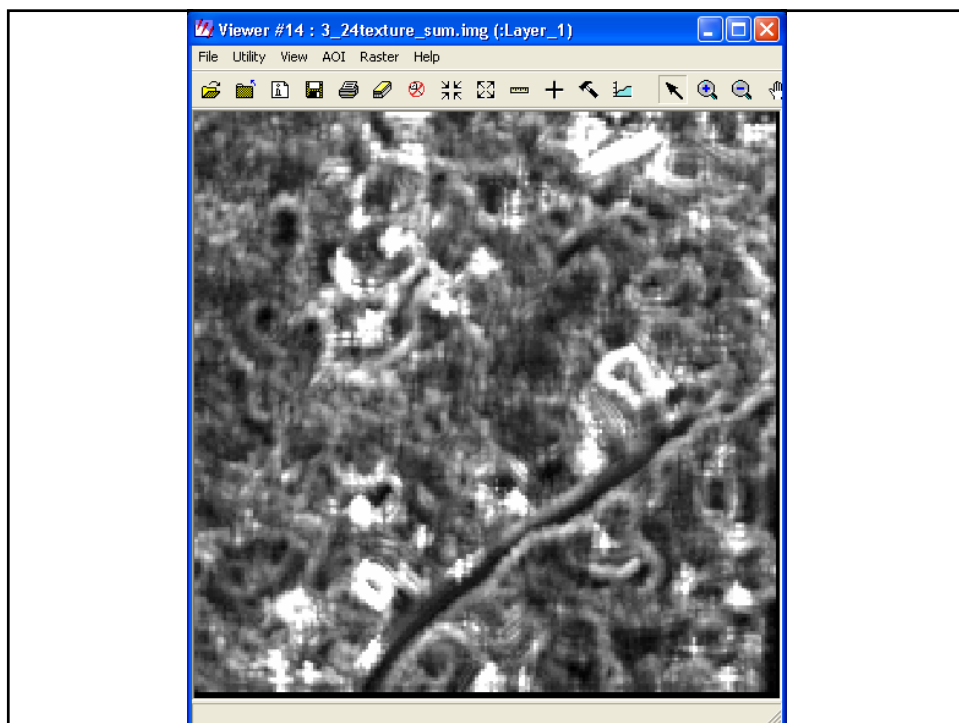
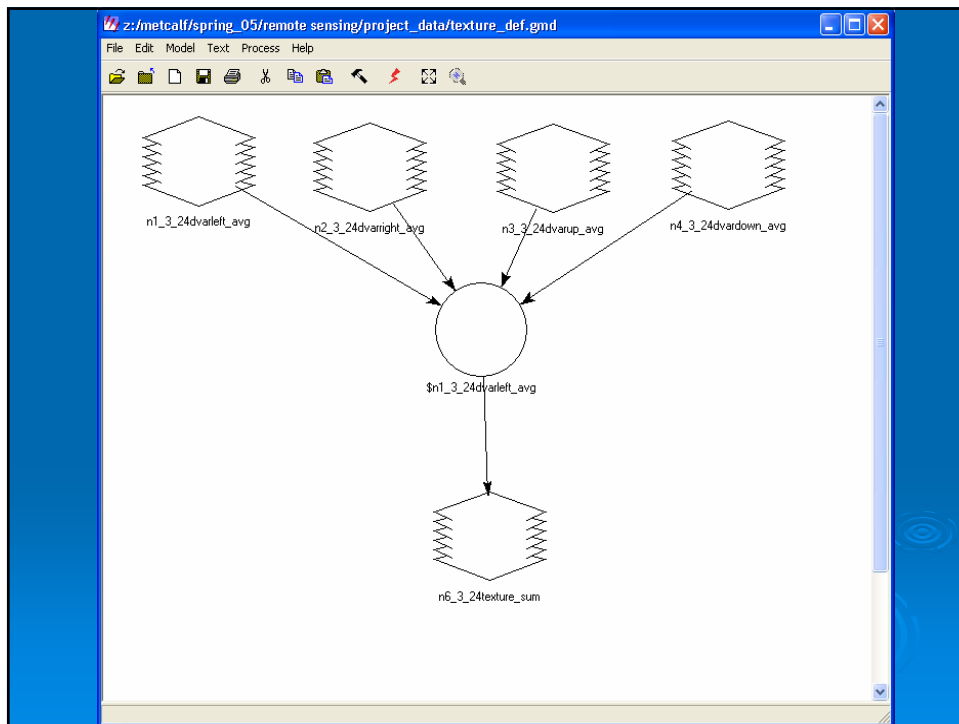
Problem:

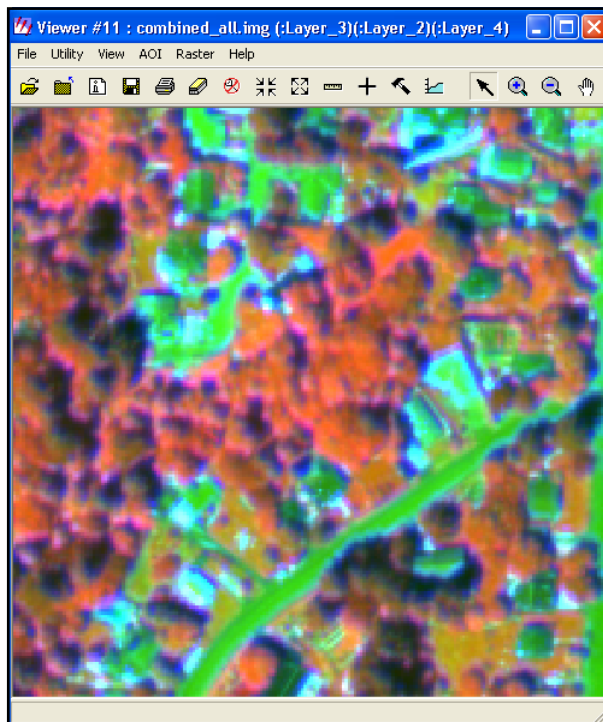
- Urban forest cover is spectrally similar, and in some cases identical, to grass and other land cover types
- The Portland State urban forest research team wanted to have a more accurate method to identify urban forest canopy and separate it from grass

Thesis:

- Yun Zhang (2001) introduced a method integrating texture with spectral signatures to separate forest canopy from other land cover types
- I applied the methods outlined in this work to an image of In Portland, Oregon.
- Zhang, Yun. 2001. Texture-Integrated Classification of Urban Treed Areas in High-Resolution Color-Infrared Imagery. *Photogrammetric Engineering and Remote Sensing*. 67 (12): 1359-1365.



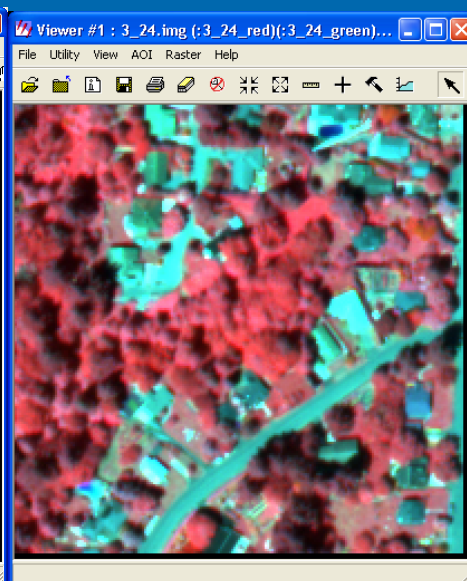
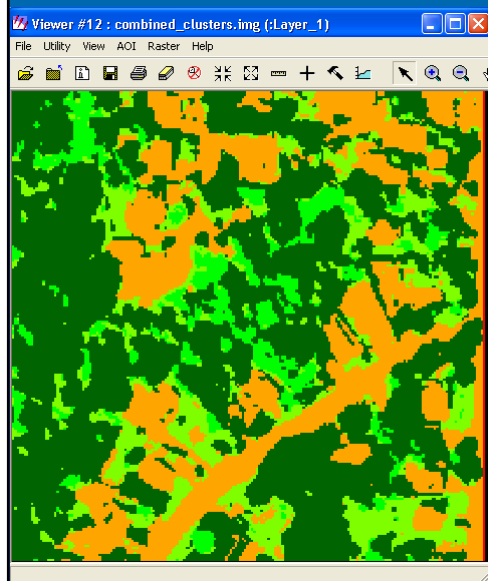




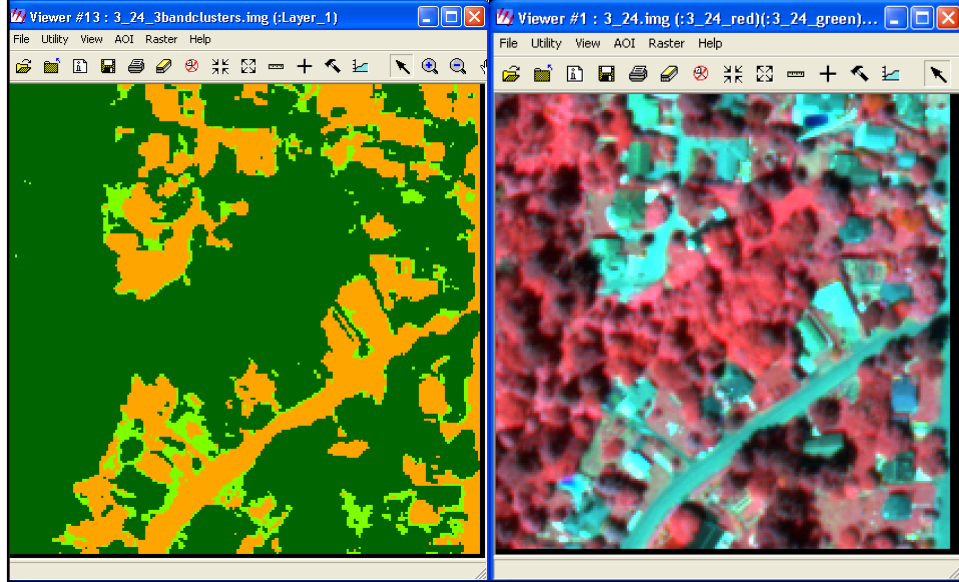
Combined texture
Plus 3 band image

3 Red: R
2 Green: G
4 Texture: B

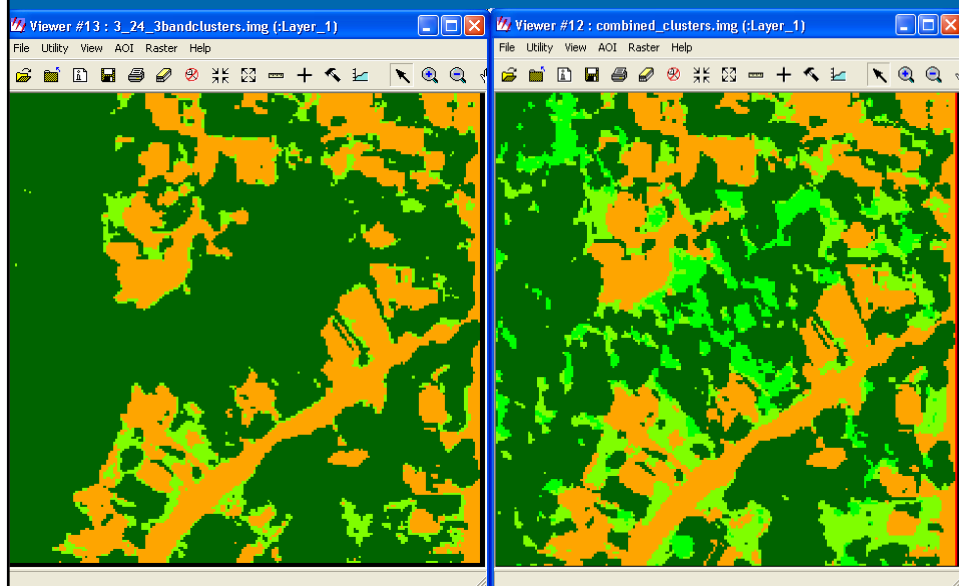
Unsupervised Texture Class Comparison with 3 Band Image



Unsupervised Spectral Class Comparison with 3 Band Image



Unsupervised Class Comparison



Conclusion and Limitations

- Improved detection of forest canopy and separation from grass
- Limited by resolution and location of image
- ERDAS functionality different from software produced by original authors