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GIS 5040

Lab 8

Starting off with the colors we have three: red, blue, and green. Red represents undeveloped areas, areas with no buildings, vegetation, or roads. Just empty lots full of dirt that will probably be built on in the future. Blue represents developed areas – meaning man-made structures such as buildings or roads. Finally, there is green which represents vegetations: trees, grass, etc.

The two classifications I performed were supervised and unsupervised classifications, and I used the ISODATA for Unsupervised and the SAM Method for supervised. Unsupervised classification clusters pixels in a dataset based on statistics only and does not use defined training classes. Supervised classification clusters pixels in a dataset into classes based on training data that you define.

ISODATA starts by calculating class means evenly distributed in the data space, then iteratively clusters the remaining pixels using minimum distance techniques. Each iteration recalculates means and reclassifies pixels with respect to the new means. This process continues until the percentage of pixels that change classes during an iteration is less than the change threshold or the maximum number of iterations is reached. SAM uses an n-D angle to match pixels to training data. It determines the spectral similarity between two spectra by calculating the angle between the spectra and treating them as vectors in a space with dimensionality equal to the number of bands. Smaller angles represent closer matches to the reference spectrum. The pixels are assigned to the class with the smallest angle.