Abstract

The emergences of more Earth observation satellites have increased the use of satellite imagery in applications like Land cover detection, environment monitoring etc. The information is generally extracted from satellite images by classification techniques. A common Problem associated with classification process is frequent occurrence of mixed pixel. Mixed Pixels are major cause of uncertainty in image classification process. Soft classifiers provide quantitative presence of a class in a pixel but the spatial location of this class remains unexplored. Subpixel classification and swapping have evolved as a latest technique to generate superior subpixel swapping images by considering output of soft classification process. SRM algorithms are mainly classified as spatial optimization based and regression based approaches. However the spatial optimization techniques are more applicable. The major drawback of conventional techniques is non-random allocation of classes to sub pixels which leads to iterative procedure of optimization that is time taking. In this paper, the proposed method performs an initial non-random allocation of classes to sub pixel and optimization procedure adapted is performed
to overcome multiple and non-allocated sub pixels to simplify SRM approach and curtail processing time. Proposed method uses soft classification approaches for generating fractional maps which is provided as input to SRM method. Early allocation of sub pixels is achieved based on amount of attractiveness to neighborhood pixels.

References


Index Terms

Computer Science Image Processing

Keywords

Subpixel mapping, subpixel classification, satellite images, landuse landcover and remote sensing data.