SpectralFormer: A new Transformer-Based Hyperspectral Image Classification

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Hyperspectral (HS) Images collect and store information across electromagnetic waves, which also are data cubes with spatial-spectral information. A general procedure of HS classification system incudes image restoration, dimensionally reduction, spectral unmixing, and feature extraction. Traditional machine learning methods have shown excellent performance in hyperspectral image classification. However, due to their inherent network structure limitations, they cannot effectively explore and represent the sequential properties of spectral features. In the past, researchers proposed a novel deep learning architecture called

SpectralFormer, which is based on Transformer and incorporates two modules to enhance classification accuracy. We retrained the dataset used in that paper and also plan to apply it to the Salina Scene and Pavia Centre Scene datasets in the future to demonstrate the practicality of this method and explore whether there are differences in classification accuracy performance across different datasets.

Keywords: Hyperspectral Image Classification; SpectralFormer; Transformer