

Special Topics in Applications (AIL861)

Artificial Intelligence for Earth Observation

Lecture 22

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Hyperspectral Images

- ❑ Band redundancy
- ❑ Usefulness of particular bands may depend on specific application/scene

Band Selection using Band Adjacency Graph

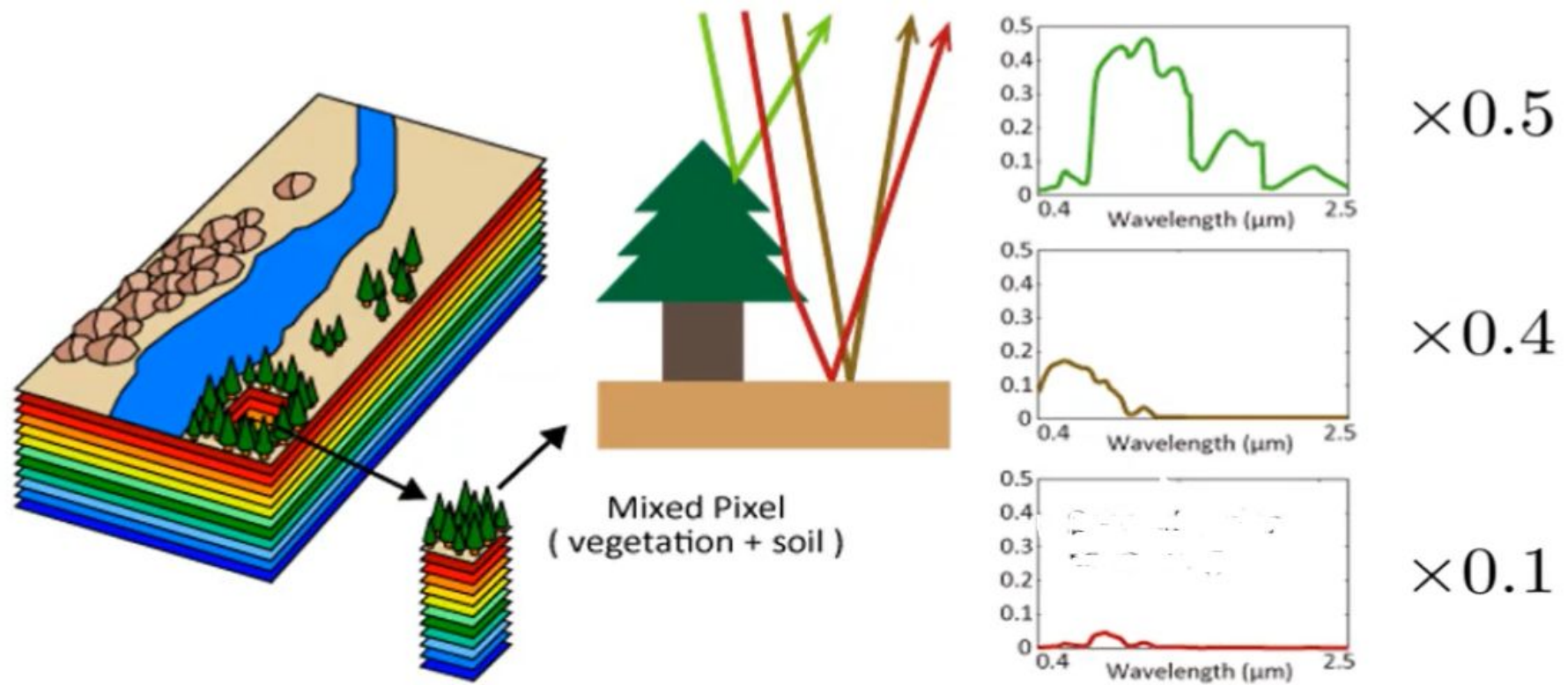
- ❑ Create a band adjacency graph that models the relationship between the bands, e.g., using following strategy
 - Compute histogram of bands
 - Compute Bhattacharyya distance between the histograms
- ❑ Cluster the graph, e.g., by using Markov clustering
- ❑ Find a representative band for each cluster

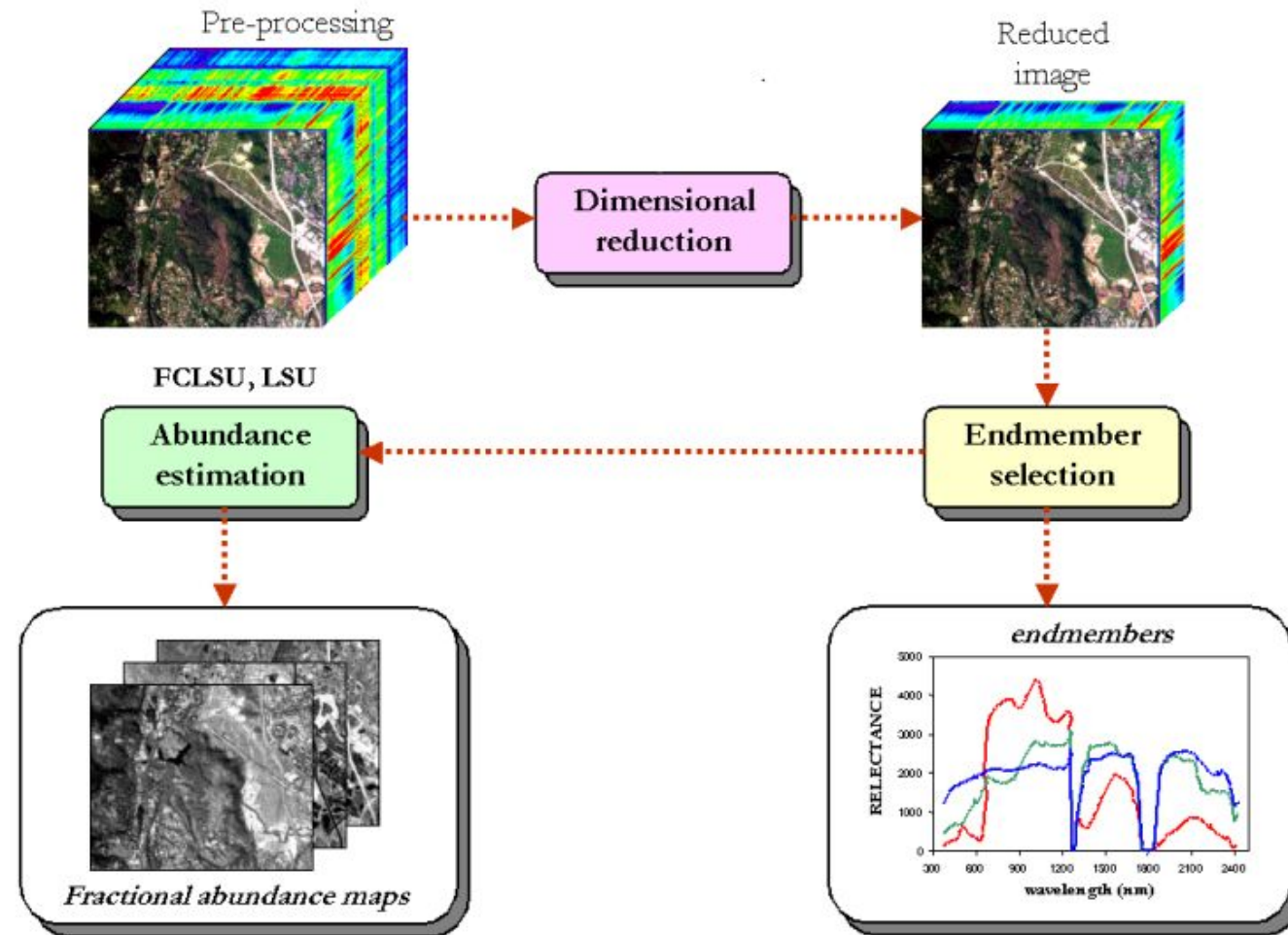
Hyperspectral band selection based on graph clustering

Band Reweighting using Channel Attention

- ❑ Rather than band selection, “band reweighting”
- ❑ Channel attention immediately after input

Hyperspectral Unmixing





Hyperspectral Target Detection (Traditional approach)

