CLAIMS

1. A method performed by one or more computers comprising:

obtaining, by the one or more computers, image data of a hyperspectral image, the image data comprising image data for each of multiple wavelength bands;

accessing, by the one or more computers, stored segmentation profile data for a particular object type that indicates, for each region type of different region types for images of an object of the particular object type, a predetermined subset of the wavelength bands designated for segmenting the region type from the different region types;

segmenting, by the one or more computers, the image data into multiple regions using, for each region type of the different region types, the predetermined subset of the wavelength bands specified in the stored segmentation profile data to segment the region type from the different region types; and

providing, by the one or more computers, output data indicating the multiple regions and the respective region types of the multiple regions.

2. The method of claim 1, wherein the predetermined subsets of the wavelength bands comprise different combinations of the wavelength bands, wherein each of the different combinations includes two or more of the wavelength bands.

3. The method of claim 1, wherein the predetermined subsets of the wavelength bands comprise different pairs of the wavelength bands.

4. The method of claim 1, wherein the accessed data specifies, for at least one of the different region types, a combination of two wavelength bands that represents a difference between the image data for the two wavelength bands divided by a sum of the image data for the two wavelength bands.

5. The method of claim 1, comprising:

accessing data that indicates, for each of the different region types, one or more operations to be performed on image data for the predetermined subset of the wavelength bands that corresponds to the region type; and

generating, for each of the different region types, a modified set of image data by performing the one or more operations corresponding to the region type on the predetermined subset of the wavelength bands that corresponds to the region type;

wherein segmenting the image data into multiple regions comprises using the modified set of image data for each region type to segment regions of the corresponding region type.

6. The method of claim 1, wherein providing the output data comprises providing a set of image data for each region type, each of the sets of image data isolating regions of the corresponding region type.

7. The method of claim 6, wherein at least one of the sets of image data includes image data derived from one or more wavelength bands different from the predetermined subset of wavelength bands used for segmentation of the region type.

8. The method of claim 1, wherein the region types correspond to different materials.

9. The method of claim 1, wherein the region types correspond to different conditions of an object.

10. The method of claim 1, wherein providing the output data comprises providing the output data to a classification system configured to determine a classification for an object represented in the hyperspectral image.

11. The method of claim 1, comprising using one or more of the segmented regions to determine a classification of a condition of an object represented in the hyperspectral image.

12. A system comprising:

one or more computers; and

one or more computer-readable media storing instructions that are operable, when executed by the one or more computers, to cause the system to perform operations comprising:

obtaining image data of a hyperspectral image, the image data comprising image data for each of multiple wavelength bands;

accessing stored segmentation profile data for a particular object type that indicates, for each region type of different region types for images of an object of the particular object type, a predetermined subset of the wavelength bands designated for segmenting the region type from the different region types;

segmenting the image data into multiple regions using, for each region type of the different region types, the predetermined subset of the wavelength bands specified in the stored segmentation profile data to segment the region type from the different region types; and

providing output data indicating the multiple regions and the respective region types of the multiple regions.

13. The system of claim 12, wherein the predetermined subsets of the wavelength bands comprise different combinations of the wavelength bands, wherein each of the different combinations includes two or more of the wavelength bands.

14. The system of claim 12, wherein the predetermined subsets of the wavelength bands comprise different pairs of the wavelength bands.

15. The system of claim 12, wherein the accessed data specifies, for at least one of the different region types, a combination of two wavelength bands that represents a difference between the image data for the two wavelength bands divided by a sum of the image data for the two wavelength bands.

16. The system of claim 12, comprising:

accessing data that indicates, for each of the different region types, one or more operations to be performed on image data for the predetermined subset of the wavelength bands that corresponds to the region type;

generating, for each of the different region types, a modified set of image data by performing the one or more operations corresponding to the region type on the predetermined subset of the wavelength bands that corresponds to the region type; and

wherein segmenting the image data into multiple regions comprises using the modified set of image data for each region type to segment regions of the corresponding region type.

17. The system of claim 12, wherein providing the output data comprises providing a set of image data for each region type, each of the sets of image data isolating regions of the corresponding region type.

18. The system of claim 17, wherein at least one of the sets of image data includes image data derived from one or more wavelength bands different from the predetermined subset of wavelength bands used for segmentation of the region type.

19. The system of claim 12, wherein the region types correspond to different materials.

20. One or more non-transitory computer-readable media storing instructions that are operable, when executed by the one or more computers, to cause the system to perform operations comprising:

obtaining, by the one or more computers, image data of a hyperspectral image, the image data comprising image data for each of multiple wavelength bands;

accessing, by the one or more computers, stored segmentation profile data for a particular object type that indicates, for each region type of different region types for images of an object of the particular object type, a predetermined subset of the wavelength bands designated for segmenting the region type from the different region types;

segmenting, by the one or more computers, the image data into multiple regions using, for each region type of the different region types, the predetermined subset of the wavelength bands specified in the stored segmentation profile data to segment the region type from the different region types; and

providing, by the one or more computers, output data indicating the multiple regions and the respective region types of the multiple regions.