Preprocessing of multi-and hyperspectral imaging data

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Analysis of data resulting from hyperspectral snapshot cameras in NIR and VIS can be used to navigate autonomous vehicles. We explain how data acquired from these devices can be used to classify terrain into drivable and non-drivable areas. This is of particular importance for unstructured outdoor areas.

One specific problem is to identify shadowed areas as they may lead to different features and as they are a source of possible misclassifications. We show some approaches to detect shadows and to extend the terrain classification at this point. This is one of several issues for preprocessing of such data which will be explained in the lecture.

We also explain a database of annotated videos from a multispectral stereo camera for evaluation of experiments which is provided to other research groups.