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L05 Image Classification with SVM

I was excited and curious at the same time when I first encountered the exercise. I was intrigued by the prospect of working with image classification and the CIFAR-10 dataset, but I was also a little put off by how difficult the task would be. I went into the exercise with a learning mindset because I had no prior experience with image classification or SVM.

Examining the notebook was a worthwhile endeavor. Installing libraries and loading the dataset were two simple concepts. It was more difficult to comprehend the nuances of SVM and feature extraction, though. The explanations and code samples proved to be beneficial, particularly when they offered precise, sequential directions. A few "aha!" moments struck me, especially when I noticed how the preprocessing steps had changed the images. To broaden my knowledge, I did look for extra sources, like online guides and documentation.

The hardest aspect of the exercise was understanding the SVM concept and how it functions with high-dimensional data. I overcome this by dissecting the theory into more digestible chunks and tinkering with the hyperparameters. Observing the model's performance increase after the parameters were adjusted was the most satisfying part. Although I did experience some unexpected outcomes, such as lower accuracy than expected, these incidents served as teaching moments that stressed the significance of model evaluation and validation.

My comprehension of machine learning and image classification has improved tremendously as a result of this exercise. I developed new abilities in feature extraction, model training, and data preprocessing. I'm excited to investigate more sophisticated methods now that I have increased confidence in my ability to use SVM for various image classification tasks.

I have some unanswered questions regarding handling overlapping classes and optimizing SVM for larger datasets after finishing this exercise. In addition, I'm interested in the performance and complexity comparison of SVM vs other machine learning methods like Convolutional Neural Nets. I intend to continue researching the broad field of machine learning and putting what I've learned to use in upcoming projects.