

## Reflective Journal: Image Classification Using SVM with CIFAR-10 Dataset

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### First Impressions:

When I first saw the CIFAR-10 dataset, I was really intrigued. Image classification feels super relevant, and I was excited to dive in. I had some background in machine learning, but SVM was a whole new territory for me.

### Learning Process:

Working through the notebook was actually pretty engaging. The step-by-step layout made it manageable, and I liked how clear everything was. Concepts like image preprocessing and feature extraction clicked for me, but I struggled a bit with how SVM actually works, especially when it came to understanding hyperplanes and support vectors. I found myself going back to those sections a few times to really nail them down.

The code examples were super helpful, too. Seeing how images were turned into grayscale and flattened really reinforced those preprocessing steps. To clear up my confusion, I also checked out some videos and articles about SVM, which made a big difference.

### Challenges:

One of the tougher parts was wrapping my head around metrics like precision, recall, and F1-score. At first, they felt overwhelming, but breaking them down helped a lot. I realized how important it is to analyze these metrics, as they really highlight where the model shines and where it needs improvement.

### Personal Growth

This exercise really boosted my understanding of image classification and machine learning overall. I came in with a basic grasp, but working with CIFAR-10 helped me see SVM in action. I now appreciate how crucial it is to prepare data like normalizing and flattening images to help the model learn effectively. I also feel much more comfortable looking at model performance through metrics like accuracy and precision. This experience has definitely sparked my interest in exploring SVM more and seeing how I can apply it in real-world scenarios.

### Looking Ahead:

After completing this exercise, I'm curious about how SVM stacks up against other classification algorithms. I'm also looking forward to diving into convolutional neural networks (CNNs) in the coming weeks. I'm excited to keep learning and see how I can use these concepts in practical ways down the road.