

Using device: CUDA

Task execution time: 3.69 seconds

**Completed Tasks:**

Task 1.1: Load CIFAR-10 Dataset ✓

Task 1.2: Visualize CIFAR-10 Samples ✓

Task 1.3: Convert to Grayscale ✓

Task 2.1: Extract SIFT Features ✓

Task 2.2: Visualize SIFT Keypoints ✓

Task 3.1: Generate Codebook ✓

Reset (Clear Task)

# CIFAR-10 Image Classification with BoVW and CNN

This application implements image classification on the CIFAR-10 dataset using:

- Bag of Visual Words (BoVW) model with SVM classifier
- Deep Learning approach with ResNet-18 CNN
- Data augmentation techniques

Follow the tasks step by step using the dropdown menu.

Select a task to run:

Task 3.1: Generate Codebook



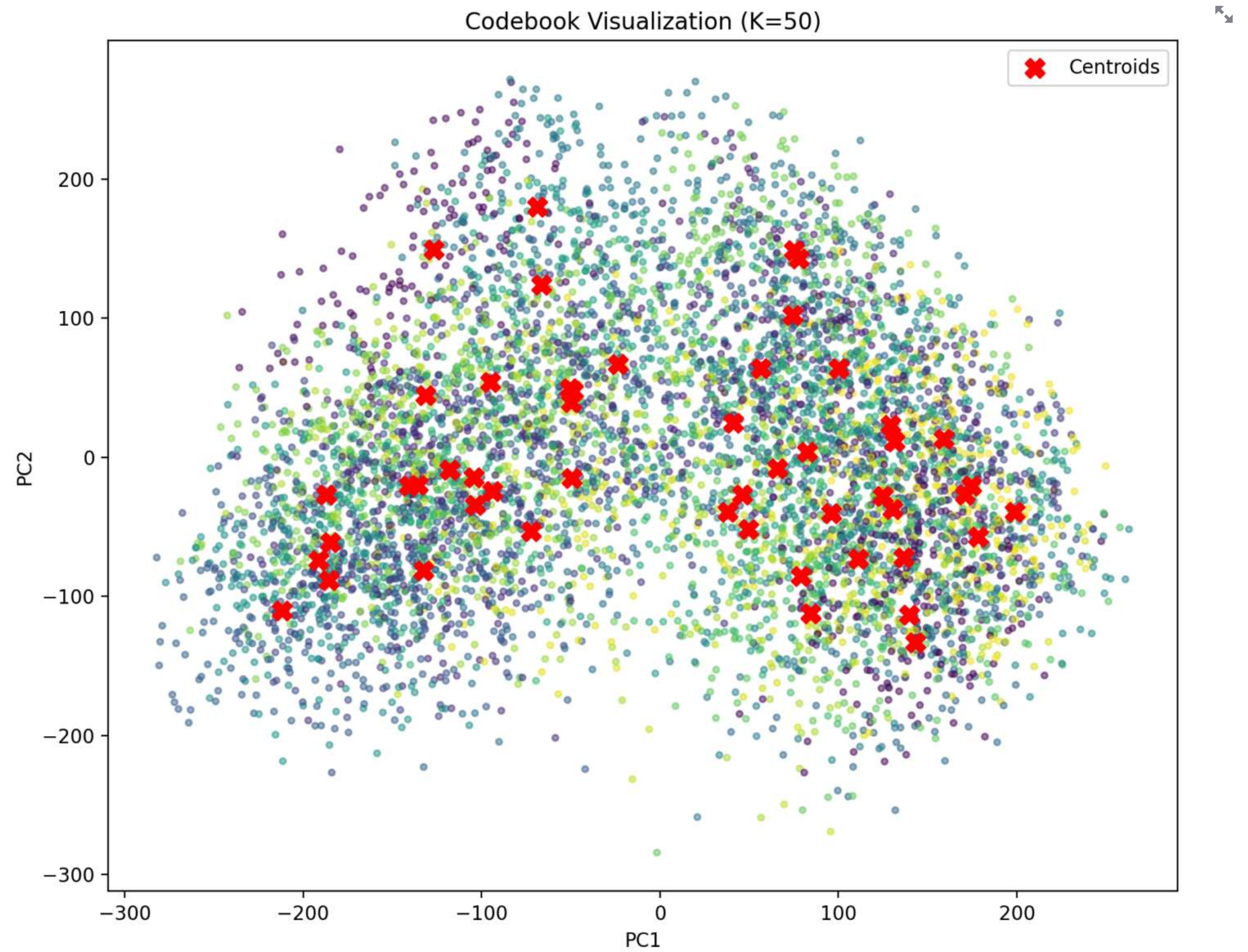
Run Task

## Task 3.1: Generate Codebook

Select codebook size

50





Codebook with 50 visual words generated successfully!

