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 4.1: Train SVM Classifier ⌄

Run Task

Task 4.1: Train SVM Classifier
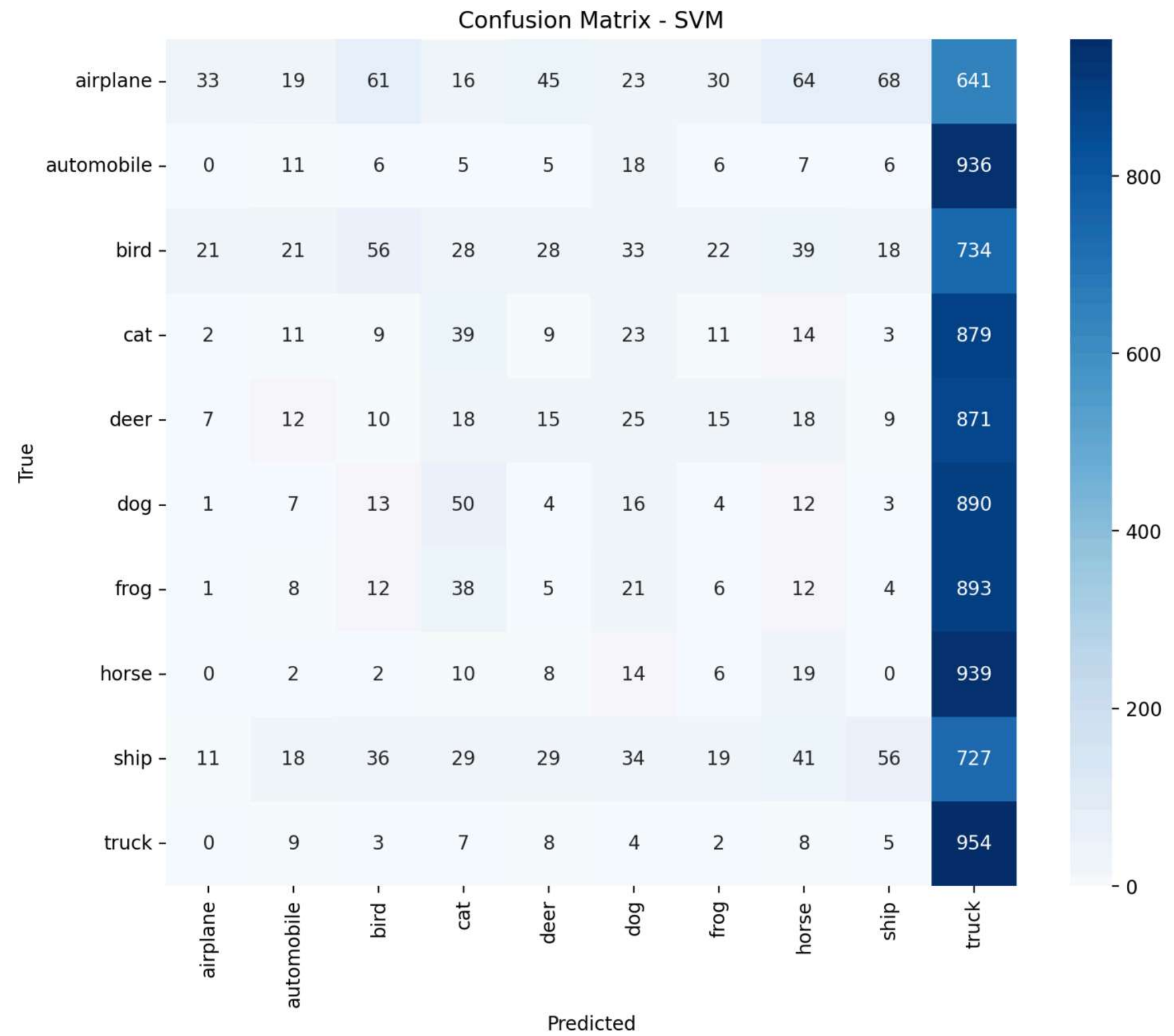
SVM regularization parameter (C)

10.00

0.10   20.00

SVM kernel

poly ⌄

SVM Classification Results

Accuracy: 0.1205

Precision: 0.1700

Recall: 0.1205

F1-Score: 0.0628

Confusion Matrix - SVM

True \ Predicted	airplane	automobile	bird	cat	deer	dog	frog	horse	ship	truck
airplane	33	19	61	16	45	23	30	64	68	641
automobile	0	11	6	5	5	18	6	7	6	936
bird	21	21	56	28	28	33	22	39	18	734
cat	2	11	9	39	9	23	11	14	3	879
deer	7	12	10	18	15	25	15	18	9	871
dog	1	7	13	50	4	16	4	12	3	890
frog	1	8	12	38	5	21	6	12	4	893
horse	0	2	2	10	8	14	6	19	0	939
ship	11	18	36	29	29	34	19	41	56	727
truck	0	9	3	7	8	4	2	8	5	954