Applied AI Project Test: Counting Salient Features for Image Classification
Results

Class Accuracy (%)

input	plane	car	bird	cat	deer	dog	frog	horse	ship	truck
Default images	75	83	48	59	67	60	83	66	84	82
Every other pixel replaced	78	83	58	50	69	52	71	81	79	74
Center replaced	63	66	32	37	55	58	68	59	73	63

Plane: Accuracy after replacing center is significantly lower than other two inputs, this indicates that the center region contains a significant number of salient features. Also, the accuracy after replacing every other pixel is better than using default images, this may indicate that the white regions of the chessboard pattern for this class contain slightly more salient features.

Car: Accuracy is same when using the first 2 input types, but low when center is replaced. So, a lot of salient features are possibly concentrated at the center.

Bird: Similar to “plane’ class, but the difference in accuracy is higher between first 2 input types, so the white regions in chessboard contain a good amount salient features. The center region contains more as the difference from default images is higher.

Cat: Accuracy is max with default images; this indicates that salient features for this class is distributed over the images. But, there may be a concentration of features at center, as accuracy is very low when its replaced.

Deer: Same as the “plane” class.

Dog: Max accuracy by using default images, but replacing center reduces it slightly and using chessboard pattern reduces accuracy more significantly. This indicates that salient features are not too much concentrated at the center, they are more distributed and the black regions on chessboard contain a lot of them.

Frog: Similar to “cat” class, but the difference is accuracy between last 2 input types is lower. This indicates that salient features are not concentrated too much at the center, more distributed.

Horse: Similar to “bird” class, the white chessboard regions contain a significant number of salient features, the center region contains some as well.

Ship: Similar to “cat” class, but not too much features are concentrated at the center, as the difference between last 2 input types is low. So the features are well distributed over the images.

Truck: Also similar to “cat” class, including the concentration of features at center.