

Image Classification Performance

Technique	Precision (%)	Recall (%)	F1-score (%)
Resnet50 + shallow	-0.01	-0.0	-0.0
Inception + shallow	-0.05	-0.04	-0.04
Resnet50 retrained	+0.0	+0.01	-0.0
Inception retrained	+0.06	-0.05	-0.05
VGG19 + shallow	x	x	x

- The numbers are based on classification of Tablet Computers
- Smaller networks performed marginally better than the larger ones for our application, probably because the datasets for individual categories were small

Image Deduplication Performance

Technique	Precision (%)	Recall (%)	F1-score (%)
Cosine Similarity	+0	-0.18	-0.1
Average Hash	-0.07	-0.05	-0.01
Perception Hash	-0.07	+0.0	-0.04
Wavelet Hash	-0.09	+0.01	-0.03
VGG19 + Cosine	-0.09	-0.15	-0.12
Inception + Cosine	-0.23	-0.2	-0.21
Resnet50 + Cosine	-0.10	-0.21	-0.15
Proposed Method	x	x	x

- The numbers are based on a benchmark dataset created out of a few thousand pairs
- Pre-trained deep learning classifiers are optimized to ignore subtle differences
- We chose a hash-based method over deep learning methods in favor of speed, interpretability, and lower cost of dataset creation