No filter

Train on 8178 samples, validate on 2044 samples

Epoch 1/10

8178/8178 [==============================] - 76s 9ms/step - loss: 1.6356 - acc: 0.6625 - val\_loss: 0.5570 - val\_acc: 0.8376

Epoch 2/10

8178/8178 [==============================] - 48s 6ms/step - loss: 0.7287 - acc: 0.8072 - val\_loss: 0.5643 - val\_acc: 0.8371

Epoch 3/10

8178/8178 [==============================] - 35s 4ms/step - loss: 0.6393 - acc: 0.8260 - val\_loss: 0.5556 - val\_acc: 0.8483

Epoch 4/10

8178/8178 [==============================] - 34s 4ms/step - loss: 0.5895 - acc: 0.8304 - val\_loss: 0.5614 - val\_acc: 0.8464

Epoch 5/10

8178/8178 [==============================] - 29s 4ms/step - loss: 0.5323 - acc: 0.8478 - val\_loss: 0.5686 - val\_acc: 0.8508

Epoch 6/10

8178/8178 [==============================] - 32s 4ms/step - loss: 0.5252 - acc: 0.8469 - val\_loss: 0.5903 - val\_acc: 0.8474

Epoch 7/10

8178/8178 [==============================] - 29s 3ms/step - loss: 0.5093 - acc: 0.8533 - val\_loss: 0.6025 - val\_acc: 0.8390

Epoch 8/10

8178/8178 [==============================] - 29s 4ms/step - loss: 0.4560 - acc: 0.8607 - val\_loss: 0.5966 - val\_acc: 0.8503

Epoch 9/10

8178/8178 [==============================] - 29s 3ms/step - loss: 0.4300 - acc: 0.8697 - val\_loss: 0.6148 - val\_acc: 0.8434

Epoch 10/10

8178/8178 [==============================] - 29s 3ms/step - loss: 0.4331 - acc: 0.8704 - val\_loss: 0.6062 - val\_acc: 0.8532

Contrast stretching

Train on 8178 samples, validate on 2044 samples

Epoch 1/10

8178/8178 [==============================] - 112s 14ms/step - loss: 1.6595 - acc: 0.6554 - val\_loss: 0.5724 - val\_acc: 0.8341

Epoch 2/10

8178/8178 [==============================] - 76s 9ms/step - loss: 0.7294 - acc: 0.8069 - val\_loss: 0.5680 - val\_acc: 0.8395

Epoch 3/10

8178/8178 [==============================] - 54s 7ms/step - loss: 0.6545 - acc: 0.8207 - val\_loss: 0.5776 - val\_acc: 0.8381

Epoch 4/10

8178/8178 [==============================] - 53s 6ms/step - loss: 0.5788 - acc: 0.8366 - val\_loss: 0.5678 - val\_acc: 0.8376

Epoch 5/10

8178/8178 [==============================] - 48s 6ms/step - loss: 0.5497 - acc: 0.8415 - val\_loss: 0.5744 - val\_acc: 0.8454

Epoch 6/10

8178/8178 [==============================] - 46s 6ms/step - loss: 0.5413 - acc: 0.8445 - val\_loss: 0.5882 - val\_acc: 0.8498

Epoch 7/10

8178/8178 [==============================] - 45s 6ms/step - loss: 0.4797 - acc: 0.8571 - val\_loss: 0.5937 - val\_acc: 0.8513

Epoch 8/10

8178/8178 [==============================] - 38s 5ms/step - loss: 0.4495 - acc: 0.8638 - val\_loss: 0.5979 - val\_acc: 0.8532

Epoch 9/10

8178/8178 [==============================] - 37s 4ms/step - loss: 0.4498 - acc: 0.8628 - val\_loss: 0.5921 - val\_acc: 0.8518

Epoch 10/10

8178/8178 [==============================] - 40s 5ms/step - loss: 0.4302 - acc: 0.8700 - val\_loss: 0.6140 - val\_acc: 0.8449

Equalization

Train on 8178 samples, validate on 2044 samples

Epoch 1/10

8178/8178 [==============================] - 116s 14ms/step - loss: 5.1105 - acc: 0.0103 - val\_loss: 5.2107 - val\_acc: 0.0103

Epoch 2/10

8178/8178 [==============================] - 73s 9ms/step - loss: 5.0512 - acc: 0.0150 - val\_loss: 5.1323 - val\_acc: 0.0098

Epoch 3/10

8178/8178 [==============================] - 57s 7ms/step - loss: 5.0156 - acc: 0.0149 - val\_loss: 5.0662 - val\_acc: 0.0122

Epoch 4/10

8178/8178 [==============================] - 55s 7ms/step - loss: 4.9822 - acc: 0.0144 - val\_loss: 5.0596 - val\_acc: 0.0142

Epoch 5/10

8178/8178 [==============================] - 56s 7ms/step - loss: 4.9492 - acc: 0.0180 - val\_loss: 4.9677 - val\_acc: 0.0113

Epoch 6/10

8178/8178 [==============================] - 71s 9ms/step - loss: 4.9049 - acc: 0.0176 - val\_loss: 5.0604 - val\_acc: 0.0157

Epoch 7/10

8178/8178 [==============================] - 70s 9ms/step - loss: 4.8889 - acc: 0.0190 - val\_loss: 4.9426 - val\_acc: 0.0108

Epoch 8/10

8178/8178 [==============================] - 72s 9ms/step - loss: 4.8545 - acc: 0.0224 - val\_loss: 4.9980 - val\_acc: 0.0157

Epoch 9/10

8178/8178 [==============================] - 61s 7ms/step - loss: 4.8468 - acc: 0.0196 - val\_loss: 5.0394 - val\_acc: 0.0103

Epoch 10/10

8178/8178 [==============================] - 52s 6ms/step - loss: 4.8189 - acc: 0.0213 - val\_loss: 4.9098 - val\_acc: 0.0127