Vit on small

Epoch 50/50

176/176 [==============================] - 67s 382ms/step - loss: 1.1561 - accuracy: 0.6623 - top-5-accuracy: 0.9162 - val\_loss: 1.8745 - val\_accuracy: 0.5246 - val\_top-5-accuracy: 0.8016

40/40 [==============================] - 5s 122ms/step - loss: 1.8122 - accuracy: 0.5317 - top-5-accuracy: 0.8066

Test accuracy: 53.17%

Test top 5 accuracy: 80.66

Vit modified on small (hyperparameter not change)

Epoch 50/50

176/176 [==============================] - 73s 418ms/step - loss: 1.1836 - accuracy: 0.6565 - top-5-accuracy: 0.9108 - val\_loss: 1.7126 - val\_accuracy: 0.5482 - val\_top-5-accuracy: 0.8288

40/40 [==============================] - 6s 142ms/step - loss: 1.6676 - accuracy: 0.5609 - top-5-accuracy: 0.8304

Test accuracy: 56.09%

Test top 5 accuracy: 83.04%

Vit modified on small (patch size from 6 to 12)

Epoch 50/50

176/176 [==============================] - 16s 91ms/step - loss: 1.7757 - accuracy: 0.5120 - top-5-accuracy: 0.8170 - val\_loss: 2.0193 - val\_accuracy: 0.4722 - val\_top-5-accuracy: 0.7594

40/40 [==============================] - 2s 42ms/step - loss: 1.9839 - accuracy: 0.4814 - top-5-accuracy: 0.7727

Test accuracy: 48.14%

Test top 5 accuracy: 77.27%

VIT modified: transformer layer from 8 to 12

Epoch 50/50

176/176 [==============================] - 72s 409ms/step - loss: 1.1496 - accuracy: 0.6664 - top-5-accuracy: 0.9154 - val\_loss: 1.7113 - val\_accuracy: 0.5406 - val\_top-5-accuracy: 0.8248

40/40 [==============================] - 6s 149ms/step - loss: 1.6891 - accuracy: 0.5586 - top-5-accuracy: 0.8265

Test accuracy: 55.86%

Test top 5 accuracy: 82.65%

Elaboration: more likely to overfit (accuracy)

Vit modified: batch size from 256 to 128

Epoch 50/50

352/352 [==============================] - 55s 157ms/step - loss: 1.3192 - accuracy: 0.6224 - top-5-accuracy: 0.8918 - val\_loss: 1.7142 - val\_accuracy: 0.5472 - val\_top-5-accuracy: 0.8204

79/79 [==============================] - 5s 59ms/step - loss: 1.6666 - accuracy: 0.5543 - top-5-accuracy: 0.8290

Test accuracy: 55.43%

Test top 5 accuracy: 82.9%

Vit modified: batch size from 256 to 512

Epoch 50/50

88/88 [==============================] - 75s 855ms/step - loss: 1.2359 - accuracy: 0.6398 - top-5-accuracy: 0.9021 - val\_loss: 1.7740 - val\_accuracy: 0.5320 - val\_top-5-accuracy: 0.8152

20/20 [==============================] - 6s 285ms/step - loss: 1.7316 - accuracy: 0.5461 - top-5-accuracy: 0.8203

Test accuracy: 54.61%

Test top 5 accuracy: 82.03%