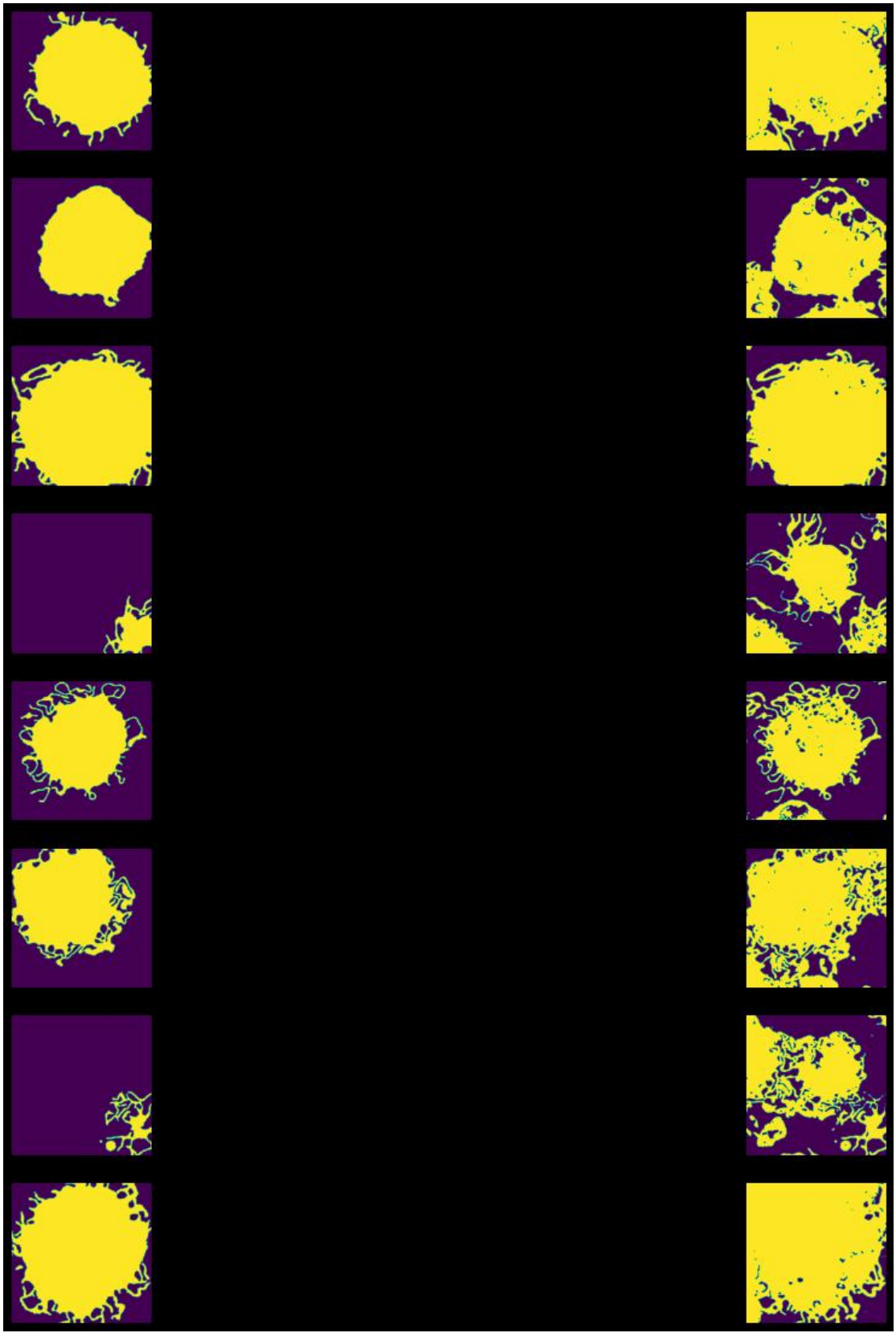
1.



2. The size of the images I used for training is 572*572
3. I use four data augmentation strategies: Horizontal flip, Vertical flip, Rotation, and gamma correction.
4. I did not deviate from the original architecture
5. I trained 20 epochs.

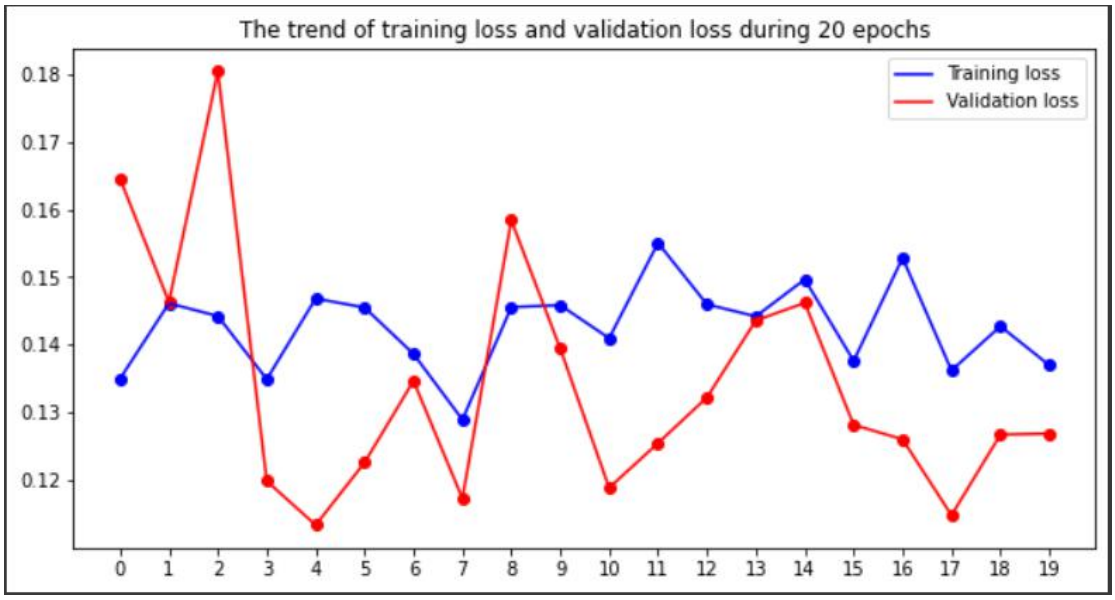
```
batch 0 --- Loss: 0.1658
batch 1 --- Loss: 0.1459
batch 2 --- Loss: 0.1377
batch 3 --- Loss: 0.1255
batch 4 --- Loss: 0.1040
batch 5 --- Loss: 0.1230
batch 6 --- Loss: 0.1265
batch 7 --- Loss: 0.0841
Epoch 1 / 20 --- Loss: 0.1350
Accuracy: 0.5628 ---- Loss: 0.1645
batch 0 --- Loss: 0.1502
batch 1 --- Loss: 0.0953
batch 2 --- Loss: 0.1300
batch 3 --- Loss: 0.1387
batch 4 --- Loss: 0.1916
batch 5 --- Loss: 0.1311
batch 6 --- Loss: 0.1260
batch 7 --- Loss: 0.1331
Epoch 2 / 20 --- Loss: 0.1461
Accuracy: 0.7363 ---- Loss: 0.1463
batch 0 --- Loss: 0.1625
batch 1 --- Loss: 0.1717
batch 2 --- Loss: 0.1097
batch 3 --- Loss: 0.1470
batch 4 --- Loss: 0.0950
batch 5 --- Loss: 0.1473
batch 6 --- Loss: 0.1163
batch 7 --- Loss: 0.1323
Epoch 3 / 20 --- Loss: 0.1442
Accuracy: 0.4498 ---- Loss: 0.1804
batch 0 --- Loss: 0.1150
batch 1 --- Loss: 0.2008
batch 2 --- Loss: 0.0876
batch 3 --- Loss: 0.0995
batch 4 --- Loss: 0.0997
batch 5 --- Loss: 0.1358
batch 6 --- Loss: 0.1836
batch 7 --- Loss: 0.0899
Epoch 4 / 20 --- Loss: 0.1349
Accuracy: 0.7764 ---- Loss: 0.1199
```

```
batch 0 --- Loss: 0.1067
batch 1 --- Loss: 0.1426
batch 2 --- Loss: 0.1607
batch 3 --- Loss: 0.1663
batch 4 --- Loss: 0.1815
batch 5 --- Loss: 0.1127
batch 6 --- Loss: 0.1315
batch 7 --- Loss: 0.0994
Epoch 5 / 20 --- Loss: 0.1468
Accuracy: 0.7936 ---- Loss: 0.1134
batch 0 --- Loss: 0.1450
batch 1 --- Loss: 0.1271
batch 2 --- Loss: 0.1365
batch 3 --- Loss: 0.1281
batch 4 --- Loss: 0.1558
batch 5 --- Loss: 0.1713
batch 6 --- Loss: 0.1149
batch 7 --- Loss: 0.1127
Epoch 6 / 20 --- Loss: 0.1455
Accuracy: 0.7794 ---- Loss: 0.1226
batch 0 --- Loss: 0.1405
batch 1 --- Loss: 0.1115
batch 2 --- Loss: 0.1451
batch 3 --- Loss: 0.1263
batch 4 --- Loss: 0.1240
batch 5 --- Loss: 0.1431
batch 6 --- Loss: 0.1110
batch 7 --- Loss: 0.1383
Epoch 7 / 20 --- Loss: 0.1387
Accuracy: 0.7646 ---- Loss: 0.1347
batch 0 --- Loss: 0.1304
batch 1 --- Loss: 0.1435
batch 2 --- Loss: 0.1277
batch 3 --- Loss: 0.1108
batch 4 --- Loss: 0.1424
batch 5 --- Loss: 0.1399
batch 6 --- Loss: 0.0943
batch 7 --- Loss: 0.0782
Epoch 8 / 20 --- Loss: 0.1290
Accuracy: 0.7818 ---- Loss: 0.1173
```

```
batch 0 --- Loss: 0.1217
batch 1 --- Loss: 0.1431
batch 2 --- Loss: 0.0994
batch 3 --- Loss: 0.2093
batch 4 --- Loss: 0.0729
batch 5 --- Loss: 0.1302
batch 6 --- Loss: 0.1761
batch 7 --- Loss: 0.1390
Epoch 9 / 20 --- Loss: 0.1456
Accuracy: 0.6413 ---- Loss: 0.1584
batch 0 --- Loss: 0.1093
batch 1 --- Loss: 0.0994
batch 2 --- Loss: 0.1145
batch 3 --- Loss: 0.1063
batch 4 --- Loss: 0.1777
batch 5 --- Loss: 0.1916
batch 6 --- Loss: 0.1772
batch 7 --- Loss: 0.1178
Epoch 10 / 20 --- Loss: 0.1459
Accuracy: 0.6234 ---- Loss: 0.1395
batch 0 --- Loss: 0.0927
batch 1 --- Loss: 0.1645
batch 2 --- Loss: 0.1346
batch 3 --- Loss: 0.1333
batch 4 --- Loss: 0.1516
batch 5 --- Loss: 0.1313
batch 6 --- Loss: 0.1300
batch 7 --- Loss: 0.1192
Epoch 11 / 20 --- Loss: 0.1410
Accuracy: 0.7781 ---- Loss: 0.1189
batch 0 --- Loss: 0.1244
batch 1 --- Loss: 0.1947
batch 2 --- Loss: 0.1313
batch 3 --- Loss: 0.1944
batch 4 --- Loss: 0.1152
batch 5 --- Loss: 0.1014
batch 6 --- Loss: 0.1517
batch 7 --- Loss: 0.1497
Epoch 12 / 20 --- Loss: 0.1550
Accuracy: 0.7557 ---- Loss: 0.1255
```

```
batch 0 --- Loss: 0.1247
batch 1 --- Loss: 0.1616
batch 2 --- Loss: 0.1284
batch 3 --- Loss: 0.1392
batch 4 --- Loss: 0.1384
batch 5 --- Loss: 0.1426
batch 6 --- Loss: 0.1140
batch 7 --- Loss: 0.1458
Epoch 13 / 20 --- Loss: 0.1460
Accuracy: 0.7178 ---- Loss: 0.1322
batch 0 --- Loss: 0.1120
batch 1 --- Loss: 0.1577
batch 2 --- Loss: 0.1376
batch 3 --- Loss: 0.1163
batch 4 --- Loss: 0.1308
batch 5 --- Loss: 0.1970
batch 6 --- Loss: 0.1083
batch 7 --- Loss: 0.1218
Epoch 14 / 20 --- Loss: 0.1442
Accuracy: 0.6701 ---- Loss: 0.1436
batch 0 --- Loss: 0.1120
batch 1 --- Loss: 0.1339
batch 2 --- Loss: 0.1559
batch 3 --- Loss: 0.1089
batch 4 --- Loss: 0.0902
batch 5 --- Loss: 0.1723
batch 6 --- Loss: 0.1058
batch 7 --- Loss: 0.2434
Epoch 15 / 20 --- Loss: 0.1497
Accuracy: 0.7130 ---- Loss: 0.1462
batch 0 --- Loss: 0.1517
batch 1 --- Loss: 0.1286
batch 2 --- Loss: 0.0968
batch 3 --- Loss: 0.1709
batch 4 --- Loss: 0.1053
batch 5 --- Loss: 0.1719
batch 6 --- Loss: 0.0882
batch 7 --- Loss: 0.1188
Epoch 16 / 20 --- Loss: 0.1376
Accuracy: 0.7410 ---- Loss: 0.1282
```

```
batch 0 --- Loss: 0.1130
batch 1 --- Loss: 0.1271
batch 2 --- Loss: 0.1788
batch 3 --- Loss: 0.0959
batch 4 --- Loss: 0.1179
batch 5 --- Loss: 0.1636
batch 6 --- Loss: 0.1227
batch 7 --- Loss: 0.2273
Epoch 17 / 20 --- Loss: 0.1528
Accuracy: 0.7045 ---- Loss: 0.1260
batch 0 --- Loss: 0.1171
batch 1 --- Loss: 0.1484
batch 2 --- Loss: 0.1562
batch 3 --- Loss: 0.1178
batch 4 --- Loss: 0.1259
batch 5 --- Loss: 0.1234
batch 6 --- Loss: 0.1134
batch 7 --- Loss: 0.1194
Epoch 18 / 20 --- Loss: 0.1362
Accuracy: 0.7798 ---- Loss: 0.1148
batch 0 --- Loss: 0.1463
batch 1 --- Loss: 0.1168
batch 2 --- Loss: 0.1349
batch 3 --- Loss: 0.1537
batch 4 --- Loss: 0.1302
batch 5 --- Loss: 0.1042
batch 6 --- Loss: 0.1279
batch 7 --- Loss: 0.1566
Epoch 19 / 20 --- Loss: 0.1427
Accuracy: 0.7608 ---- Loss: 0.1267
batch 0 --- Loss: 0.1302
batch 1 --- Loss: 0.0920
batch 2 --- Loss: 0.1450
batch 3 --- Loss: 0.2177
batch 4 --- Loss: 0.1248
batch 5 --- Loss: 0.1274
batch 6 --- Loss: 0.0976
batch 7 --- Loss: 0.0927
Epoch 20 / 20 --- Loss: 0.1370
Accuracy: 0.7355 ---- Loss: 0.1269
```



6. I used batch size = 4, and learning rate = 1e-2
7. The training takes 10 minutes