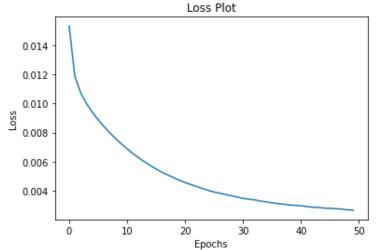
## **EPOCH RESULTS FOR: (Image Captioning: Attention)**

## **Model Description:**

Attention Mechanism	Vocabulary(Unique Words)	Number of Images	Training Epochs	Captions per image	Total Datapoints	Training Batch Size
Bahdanau Attention	7,000	10,000	50	5	50,000	64

## **EPOCHS**

```
Epoch 1 Batch 0 Loss 2.2142
Epoch 1 Batch 100 Loss 1.1464
Epoch 1 Batch 200 Loss 0.9771
Epoch 1 Batch 300 Loss 0.9189
Epoch 1 Batch 300 Loss 0.9824
Epoch 1 Batch 500 Loss 0.8924
Epoch 1 Batch 500 Loss 0.8937
Epoch 1 Loss 0.015348
Time taken for 1 epoch 554.2800102233887 sec
Epoch 2 Batch 0 Loss 0.8347
Epoch 2 Batch 100 Loss 0.7233
Epoch 2 Batch 200 Loss 0.8007
Epoch 2 Batch 300 Loss 0.7592
Epoch 2 Batch 300 Loss 0.7592
Epoch 2 Batch 400 Loss 0.7620
Epoch 2 Batch 500 Loss 0.7127
Epoch 2 Loss 0.011841
Time taken for 1 epoch 554.6843700408936 sec
  Epoch 3 Batch 0 Loss 0.6499
 Epoch 3 Batch 00 Loss 0.4594
Epoch 3 Batch 100 Loss 0.4514
Epoch 3 Batch 200 Loss 0.7122
Epoch 3 Batch 300 Loss 0.6759
Epoch 3 Batch 400 Loss 0.7019
Epoch 3 Batch 500 Loss 0.6714
Epoch 3 Loss 0.010746
Time taken for 1 epoch 552.682324886322 sec
Epoch 4 Batch 0 Loss 0.6805
Epoch 4 Batch 100 Loss 0.6215
Epoch 4 Batch 200 Loss 0.6215
Epoch 4 Batch 300 Loss 0.7015
Epoch 4 Batch 300 Loss 0.7015
Epoch 4 Batch 400 Loss 0.5800
Epoch 4 Batch 500 Loss 0.6613
Epoch 4 Loss 0.00997
Time taken for 1 epoch 550.1446187496185 sec
 Epoch 5 Batch 0 Loss 0.6185
Epoch 5 Batch 100 Loss 0.6318
Epoch 5 Batch 200 Loss 0.6393
Epoch 5 Batch 300 Loss 0.5979
Epoch 5 Batch 400 Loss 0.5999
Epoch 5 Batch 500 Loss 0.5999
Epoch 5 Loss 0.009407
   Time taken for 1 epoch 551.9783275127411 sec
 Epoch 6 Batch 0 Loss 0.6574
 Epoch 6 Batch 100 Loss 0.5001
Epoch 6 Batch 200 Loss 0.5675
Epoch 6 Batch 300 Loss 0.5089
  Epoch 6 Batch 400 Loss 0.5749
Epoch 6 Batch 500 Loss 0.6397
Epoch 6 Loss 0.008892
  Time taken for 1 epoch 547.6043107509613 sec
  Epoch 7 Batch 0 Loss 0.5598
 Epoch 7 Batch 10 Loss 0.5598
Epoch 7 Batch 100 Loss 0.4959
Epoch 7 Batch 200 Loss 0.6244
Epoch 7 Batch 300 Loss 0.5458
Epoch 7 Batch 400 Loss 0.4935
Epoch 7 Batch 500 Loss 0.5410
Epoch 7 Loss 0.08420
Time taken for 1 epoch 551.631519317627 sec
Epoch 8 Batch 0 Loss 0.5343
Epoch 8 Batch 100 Loss 0.5022
Epoch 8 Batch 200 Loss 0.5153
Epoch 8 Batch 300 Loss 0.5147
Epoch 8 Batch 400 Loss 0.4812
Epoch 8 Batch 500 Loss 0.5488
  Epoch 8 Loss 0.007996
Time taken for 1 epoch 550.8586866855621 sec
  Epoch 9 Batch 0 Loss 0.5121
 Epoch 9 Batch 100 Loss 0.5121
Epoch 9 Batch 100 Loss 0.4532
Epoch 9 Batch 200 Loss 0.5068
Epoch 9 Batch 300 Loss 0.4377
Epoch 9 Batch 400 Loss 0.43943
Epoch 9 Batch 500 Loss 0.4785
Epoch 9 Loss 0.007591
  Time taken for 1 epoch 550.6971366405487 sec
  Epoch 10 Batch 0 Loss 0.5346
 Epoch 10 Batch 100 Loss 0.4545
Epoch 10 Batch 200 Loss 0.4324
Epoch 10 Batch 300 Loss 0.4375
  Epoch 10 Batch 400 Loss 0.4640
  Epoch 10 Batch 500 Loss 0.4543
Epoch 10 Loss 0.007221
 Time taken for 1 epoch 546.8758521080017 sec
```



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Epoch 11 Batch 0 Loss 0.4591
Epoch 11 Batch 100 Loss 0.4183
Epoch 11 Batch 200 Loss 0.4013
Epoch 11 Batch 300 Loss 0.4324
Epoch 11 Batch 400 Loss 0.4688
Epoch 11 Batch 500 Loss 0.4141
Epoch 11 Loss 0.006886
Time taken for 1 epoch 550.9527225494385 sec
Epoch 12 Batch 0 Loss 0.4698
Epoch 12 Batch 100 Loss 0.4390
Epoch 12 Batch 200 Loss 0.4066
Epoch 12 Batch 300 Loss 0.4474
Epoch 12 Batch 400 Loss 0.4225
Epoch 12 Batch 500 Loss 0.4311
Epoch 12 Loss 0.006556
Time taken for 1 epoch 551.2943000793457 sec
Epoch 13 Batch 0 Loss 0.4296
Epoch 13 Batch 100 Loss 0.4151
Epoch 13 Batch 200 Loss 0.4241
Epoch 13 Batch 300 Loss 0.3835
Epoch 13 Batch 400 Loss 0.3990
Epoch 13 Batch 500 Loss 0.3838
Epoch 13 Loss 0.006259
Time taken for 1 epoch 550.6903119087219 sec
Epoch 14 Batch 0 Loss 0.4141
Epoch 14 Batch 100 Loss 0.3533
Epoch 14 Batch 200 Loss 0.4380
Epoch 14 Batch 300 Loss 0.3835
Epoch 14 Batch 400 Loss 0.3819
Epoch 14 Batch 500 Loss 0.3751
Epoch 14 Loss 0.005986
Time taken for 1 epoch 551.0368156433105 sec
Epoch 15 Batch 0 Loss 0.3971
Epoch 15 Batch 100 Loss 0.4045
Epoch 15 Batch 200 Loss 0.3675
Epoch 15 Batch 300 Loss 0.3664
Epoch 15 Batch 400 Loss 0.3219
Epoch 15 Batch 500 Loss 0.3677
Epoch 15 Loss 0.005729
Time taken for 1 epoch 554.2714295387268 sec
 Epoch 16 Batch 0 Loss 0.3703
 Epoch 16 Batch 100 Loss 0.3428
Epoch 16 Batch 200 Loss 0.3654
 Epoch 16 Batch 300 Loss 0.3291
Epoch 16 Batch 400 Loss 0.3727
 Epoch 16 Batch 500 Loss 0.3248
Epoch 16 Loss 0.005491
 Time taken for 1 epoch 553.8680918216705 sec
 Epoch 17 Batch 0 Loss 0.3735
 Epoch 17 Batch 100 Loss 0.3504
Epoch 17 Batch 200 Loss 0.3230
 Epoch 17 Batch 300 Loss 0.3384
 Epoch 17 Batch 400 Loss 0.3281
 Epoch 17 Batch 500 Loss 0.3737
Epoch 17 Loss 0.005268
 Time taken for 1 epoch 553.3184161186218 sec
 Epoch 18 Batch 0 Loss 0.3260
 Epoch 18 Batch 100 Loss 0.3347
 Epoch 18 Batch 200 Loss 0.3185
 Epoch 18 Batch 300 Loss 0.3432
 Epoch 18 Batch 400 Loss 0.3087
 Epoch 18 Batch 500 Loss 0.3160
Epoch 18 Loss 0.005075
 Time taken for 1 epoch 552.9608027935028 sec
 Epoch 19 Batch 0 Loss 0.3252
 Epoch 19 Batch 100 Loss 0.3065
 Epoch 19 Batch 200 Loss 0.3344
 Epoch 19 Batch 300 Loss 0.3356
 Epoch 19 Batch 400 Loss 0.3150
Epoch 19 Batch 500 Loss 0.3074
 Epoch 19 Loss 0.004901
 Time taken for 1 epoch 552.1421065330505 sec
 Epoch 20 Batch 0 Loss 0.3271
Epoch 20 Batch 100 Loss 0.3018
 Epoch 20 Batch 200 Loss 0.2949
Epoch 20 Batch 300 Loss 0.2844
 Epoch 20 Batch 400 Loss 0.2705
 Epoch 20 Batch 500 Loss 0.3125
 Epoch 20 Loss 0.004717
 Time taken for 1 epoch 558.0848937034607 sec
```

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Epoch 20 Batch 0 Loss 0.3271
Epoch 20 Batch 100 Loss 0.3018
Epoch 20 Batch 200 Loss 0.2949
Epoch 20 Batch 300 Loss 0.2844
  Epoch 20 Batch 400 Loss 0.2705
Epoch 20 Batch 500 Loss 0.3125
Epoch 20 Loss 0.004717
Time taken for 1 epoch 558.0848937034607 sec
 Epoch 21 Batch 0 Loss 0.3453
Epoch 21 Batch 100 Loss 0.2980
Epoch 21 Batch 200 Loss 0.2741
Epoch 21 Batch 300 Loss 0.3023
Epoch 21 Batch 400 Loss 0.2741
Epoch 21 Batch 400 Loss 0.2741
Epoch 21 Batch 500 Loss 0.2787
Epoch 21 Loss 0.004552
Time taken for 1 epoch 561.5814542770386 sec
Epoch 22 Batch 0 Loss 0.2917
Epoch 22 Batch 100 Loss 0.2727
Epoch 22 Batch 200 Loss 0.2859
Epoch 22 Batch 300 Loss 0.2566
Epoch 22 Batch 400 Loss 0.2654
Epoch 22 Batch 400 Loss 0.3199
Epoch 22 Loss 0.004413
Time taken for 1 epoch 564.9173562526703 sec
Epoch 23 Batch 0 Loss 0.3059
Epoch 23 Batch 100 Loss 0.2920
Epoch 23 Batch 200 Loss 0.2789
Epoch 23 Batch 300 Loss 0.2634
Epoch 23 Batch 400 Loss 0.2530
Epoch 23 Batch 500 Loss 0.2608
Epoch 23 Loss 0.004282
Time taken for 1 epoch 562.5781764984131 sec
  Epoch 24 Batch 0 Loss 0.3168
  Epoch 24 Batch 10 Loss 0.3168
Epoch 24 Batch 100 Loss 0.2595
Epoch 24 Batch 200 Loss 0.2683
Epoch 24 Batch 300 Loss 0.2729
Epoch 24 Batch 400 Loss 0.2706
Epoch 24 Batch 500 Loss 0.2733
Epoch 24 Loss 0.004144
Time taken for 1 epoch 561.6380219459534 sec
 Epoch 25 Batch 0 Loss 0.2682
Epoch 25 Batch 100 Loss 0.2974
Epoch 25 Batch 200 Loss 0.2589
Epoch 25 Batch 300 Loss 0.2300
Epoch 25 Batch 400 Loss 0.2644
Epoch 25 Batch 500 Loss 0.2405
   Epoch 25 Loss 0.004015
Time taken for 1 epoch 559.8755502700806 sec
     Epoch 25 Batch 100 Loss 0.2682

Epoch 25 Batch 100 Loss 0.2974

Epoch 25 Batch 200 Loss 0.2589

Epoch 25 Batch 300 Loss 0.2580

Epoch 25 Batch 300 Loss 0.2664

Epoch 25 Batch 400 Loss 0.2664

Epoch 25 Batch 500 Loss 0.2405

Epoch 25 Loss 0.04015

Time taken for 1 epoch 559.8755502700806 sec
     Epoch 26 Batch 0 Loss 0.3146
Epoch 26 Batch 100 Loss 0.2524
Epoch 26 Batch 200 Loss 0.2505
Epoch 26 Batch 300 Loss 0.2580
Epoch 26 Batch 400 Loss 0.2188
Epoch 26 Batch 500 Loss 0.2281
Epoch 26 Loss 0.003903
Time taken for 1 epoch 553.3216621875763 sec
       Epoch 27 Batch 0 Loss 0.2568
Epoch 27 Batch 100 Loss 0.2396
Epoch 27 Batch 200 Loss 0.2388
Epoch 27 Batch 300 Loss 0.2449
Epoch 27 Batch 400 Loss 0.2529
Epoch 27 Loss 0.003817
Time taken for 1 epoch 555.8529074192047 sec
       Epoch 28 Batch 0 Loss 0.2676
Epoch 28 Batch 100 Loss 0.2304
Epoch 28 Batch 400 Loss 0.2531
Epoch 28 Batch 500 Loss 0.2473
Epoch 28 Loss 0.003729
Time taken for 1 epoch 550.5141272544861 sec
     Epoch 29 Batch 0 Loss 0.2679
Epoch 29 Batch 100 Loss 0.2257
Epoch 29 Batch 200 Loss 0.2443
Epoch 29 Batch 300 Loss 0.2173
Epoch 29 Batch 400 Loss 0.2208
Epoch 29 Batch 400 Loss 0.2208
Epoch 29 Batch 500 Loss 0.2328
Epoch 29 Loss 0.003639
Time taken for 1 epoch 542.571977853775 sec
       Epoch 30 Batch 0 Loss 0.2527
Epoch 30 Batch 100 Loss 0.2356
Epoch 30 Batch 200 Loss 0.2363
Epoch 30 Batch 300 Loss 0.2363
Epoch 30 Batch 400 Loss 0.2294
Epoch 30 Batch 500 Loss 0.22429
        Epoch 30 Loss 0.003558
Time taken for 1 epoch 535.9317519664764 sec
```

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Epoch 31 Batch 0 Loss 0.2827
Epoch 31 Batch 100 Loss 0.2213
Epoch 31 Batch 200 Loss 0.2158
Epoch 31 Batch 300 Loss 0.2103
Epoch 31 Batch 400 Loss 0.2559
Epoch 31 Batch 500 Loss 0.2216
Epoch 31 Loss 0.003461
Time taken for 1 epoch 559.9386715888977 sec
Epoch 32 Batch 0 Loss 0.2466
Epoch 32 Batch 100 Loss 0.2137
Epoch 32 Batch 200 Loss 0.2147
Epoch 32 Batch 200 Loss 0.2147
Epoch 32 Batch 300 Loss 0.2008
Epoch 32 Batch 400 Loss 0.2068
Epoch 32 Batch 500 Loss 0.2173
Epoch 32 Loss 0.003411
Time taken for 1 epoch 554.3921041488647 sec
Epoch 33 Batch 0 Loss 0.2087
Epoch 33 Batch 100 Loss 0.2038
Epoch 33 Batch 200 Loss 0.2128
Epoch 33 Batch 300 Loss 0.2023
Epoch 33 Batch 400 Loss 0.2028
Epoch 33 Batch 500 Loss 0.2099
Epoch 33 Loss 0.003362
Time taken for 1 epoch 557.5329687595367 sec
Epoch 34 Batch 0 Loss 0.2090
Epoch 34 Batch 100 Loss 0.2075
Epoch 34 Batch 200 Loss 0.2083
Epoch 34 Batch 300 Loss 0.2069
Epoch 34 Batch 300 Loss 0.2290
Epoch 34 Batch 500 Loss 0.1830
Epoch 34 Loss 0.003278
Time taken for 1 epoch 547.5681939125061 sec
Epoch 35 Batch 0 Loss 0.2312
Epoch 35 Batch 100 Loss 0.2017
Epoch 35 Batch 200 Loss 0.1959
Epoch 35 Batch 300 Loss 0.2082
Epoch 35 Batch 400 Loss 0.2036
Epoch 35 Batch 500 Loss 0.2131
Epoch 35 Loss 0.003222
Time taken for 1 epoch 540.3788499832153 sec
Epoch 36 Batch 0 Loss 0.2205
Epoch 36 Batch 100 Loss 0.1920
Epoch 36 Batch 200 Loss 0.1949
Epoch 36 Batch 300 Loss 0.1740
Epoch 36 Batch 400 Loss 0.2131
Epoch 36 Batch 500 Loss 0.2120
Epoch 36 Loss 0.003158
Time taken for 1 epoch 557.9499135017395 sec
Epoch 37 Batch 0 Loss 0.2216
Epoch 37 Batch 100 Loss 0.1981
Epoch 37 Batch 200 Loss 0.2039
Epoch 37 Batch 300 Loss 0.1837
Epoch 37 Batch 400 Loss 0.1906
Epoch 37 Batch 500 Loss 0.1958
Epoch 37 Loss 0.003107
Time taken for 1 epoch 556.4678466320038 sec
Epoch 38 Batch 0 Loss 0.2182
Epoch 38 Batch 100 Loss 0.1972
Epoch 38 Batch 200 Loss 0.2003
Epoch 38 Batch 300 Loss 0.2014
Epoch 38 Batch 400 Loss 0.2079
Epoch 38 Batch 500 Loss 0.2141
Epoch 39 Batch 0 Loss 0.2271
Epoch 39 Batch 100 Loss 0.2026
Epoch 39 Batch 300 Loss 0.1755
Epoch 39 Batch 400 Loss 0.2014
Epoch 39 Batch 500 Loss 0.2066
Epoch 39 Loss 0.003009
Time taken for 1 epoch 563.997371673584 sec
Epoch 40 Batch 0 Loss 0.1919
Epoch 40 Batch 100 Loss 0.1837
Epoch 40 Batch 200 Loss 0.2109
Epoch 40 Batch 300 Loss 0.1880
Epoch 40 Batch 400 Loss 0.1879
Epoch 40 Batch 500 Loss 0.2209
Epoch 40 Loss 0.002982
Time taken for 1 epoch 560.5308771133423 sec
```

```
Epoch 41 Batch 0 Loss 0.1843
Epoch 41 Batch 100 Loss 0.2021
Epoch 41 Batch 200 Loss 0.1980
Epoch 41 Batch 300 Loss 0.1929
Epoch 41 Batch 400 Loss 0.1966
Epoch 41 Batch 500 Loss 0.1866
Epoch 41 Loss 0.002957
Time taken for 1 epoch 559.7977449893951 sec
Epoch 42 Batch 0 Loss 0.1797
Epoch 42 Batch 100 Loss 0.1750
Epoch 42 Batch 200 Loss 0.1834
Epoch 42 Batch 300 Loss 0.1850
Epoch 42 Batch 400 Loss 0.2101
Epoch 42 Batch 500 Loss 0.1827
Epoch 42 Loss 0.002898
Time taken for 1 epoch 568.3542473316193 sec
Epoch 43 Batch 0 Loss 0.2026
Epoch 43 Batch 100 Loss 0.1843
Epoch 43 Batch 200 Loss 0.1939
Epoch 43 Batch 300 Loss 0.1673
Epoch 43 Batch 400 Loss 0.1795
Epoch 43 Batch 500 Loss 0.1870
Epoch 43 Loss 0.002853
Time taken for 1 epoch 562.7868027687073 sec
Epoch 44 Batch 100 Loss 0.1762
Epoch 44 Batch 200 Loss 0.1888
Epoch 44 Batch 300 Loss 0.1703
Epoch 44 Batch 400 Loss 0.1688
Epoch 44 Batch 500 Loss 0.1628
Epoch 44 Loss 0.002835
Time taken for 1 epoch 559.7981469631195 sec
Epoch 45 Batch 0 Loss 0.1900
Epoch 45 Batch 100 Loss 0.1690
Epoch 45 Batch 200 Loss 0.1812
Epoch 45 Batch 300 Loss 0.1799
Epoch 45 Batch 400 Loss 0.1738
Epoch 45 Batch 500 Loss 0.1695
Epoch 45 Loss 0.002792
Time taken for 1 epoch 559.8919429779053 sec
Epoch 46 Batch 0 Loss 0.1853
Epoch 46 Batch 100 Loss 0.1900
Epoch 46 Batch 200 Loss 0.1849
Epoch 46 Batch 300 Loss 0.1732
Epoch 46 Batch 400 Loss 0.1760
Epoch 46 Batch 500 Loss 0.1658
Epoch 46 Loss 0.002778
Time taken for 1 epoch 562.2853536605835 sec
Epoch 47 Batch 0 Loss 0.2004
Epoch 47 Batch 100 Loss 0.1610
Epoch 47 Batch 200 Loss 0.1733
Epoch 47 Batch 300 Loss 0.1567
Epoch 47 Batch 400 Loss 0.1839
Epoch 47 Batch 500 Loss 0.1860
Epoch 47 Loss 0.002749
Time taken for 1 epoch 557.4100069999695 sec
Epoch 48 Batch 0 Loss 0.1895
Epoch 48 Batch 100 Loss 0.1827
Epoch 48 Batch 200 Loss 0.1803
Epoch 48 Batch 300 Loss 0.1634
Epoch 48 Batch 400 Loss 0.1701
Epoch 48 Batch 500 Loss 0.1710
Epoch 48 Loss 0.002725
Time taken for 1 epoch 558.6153540611267 sec
Epoch 49 Batch 0 Loss 0.1875
Epoch 49 Batch 100 Loss 0.1554
Epoch 49 Batch 200 Loss 0.1767
Epoch 49 Batch 300 Loss 0.1880
Epoch 49 Batch 400 Loss 0.1703
Epoch 49 Batch 500 Loss 0.1504
Epoch 49 Loss 0.002670
Time taken for 1 epoch 558.2426979541779 sec
Epoch 50 Batch 0 Loss 0.1847
Epoch 50 Batch 100 Loss 0.1475
Epoch 50 Batch 200 Loss 0.1735
Epoch 50 Batch 300 Loss 0.1837
Epoch 50 Batch 400 Loss 0.1711
Epoch 50 Batch 500 Loss 0.1791
Epoch 50 Loss 0.002648
Time taken for 1 epoch 555.0394291877747 sec
```