A2

R3: Loss

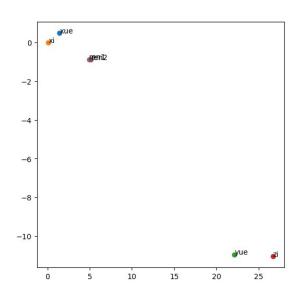
```
2024-03-25 20:52:38,187 - INFO - Config 1:
2024-03-25 20:52:38,191 - INFO - Hyper-parameters:emb_size=50,window_size=1,k=5
2024-03-25 20:52:38,193 - INFO - Saved embedding file name:embeddings/50_1_5.txt
2024-03-25 20:53:02,483 - INFO - Epoch [1/10], Iteration [1000/9937], Loss: 14.065583411693574
2024-03-25 20:53:03,764 - INFO - Epoch [1/10], Iteration [2000/9937], Loss: 13.558928376436233
2024-03-25 20:53:05,014 - INFO - Epoch [1/10], Iteration [3000/9937], Loss: 13.255423587123554
2024-03-25 20:53:06,306 - INFO - Epoch [1/10], Iteration [4000/9937], Loss: 13.136667190745474
2024-03-25 20:53:07,727 - INFO - Epoch [1/10], Iteration [5000/9937], Loss: 13.026052001345157
2024-03-25 20:53:09,235 - INFO - Epoch [1/10], Iteration [6000/9937], Loss: 12.90033220681548
2024-03-25 20:53:10,695 - INFO - Epoch [1/10], Iteration [7000/9937], Loss: 12.791077032847063
2024-03-25 20:53:12,128 - INFO - Epoch [1/10], Iteration [8000/9937], Loss: 12.742218492783605
2024-03-25 20:53:13,420 - INFO - Epoch [1/10], Iteration [9000/9937], Loss: 12.712874875570337
2024-03-25 20:53:15,955 - INFO - Epoch [2/10], Iteration [1000/9937], Loss: 11.052028895974159
2024-03-25 20:53:17,212 - INFO - Epoch [2/10], Iteration [2000/9937], Loss: 10.660829055011272
2024-03-25 20:53:18,649 - INFO - Epoch [2/10], Iteration [3000/9937], Loss: 10.447713804920514
2024-03-25 20:53:20,324 - INFO - Epoch [2/10], Iteration [4000/9937], Loss: 10.30328326688707
2024-03-25 20:53:21,825 - INFO - Epoch [2/10], Iteration [5000/9937], Loss: 10.185593998086452
2024-03-25 20:53:23,212 - INFO - Epoch [2/10], Iteration [6000/9937], Loss: 10.07626058041056
2024-03-25 20:53:24,543 - INFO - Epoch [2/10], Iteration [7000/9937], Loss: 9.95547586867639
2024-03-25 20:53:25,925 - INFO - Epoch [2/10], Iteration [8000/9937], Loss: 9.849252057366073
2024-03-25 20:53:27,468 - INFO - Epoch [2/10], Iteration [9000/9937], Loss: 9.799620178517369
2024-03-25 20:53:30,484 - INFO - Epoch [3/10], Iteration [1000/9937], Loss: 8.79250638127327
2024-03-25 20:53:32,132 - INFO - Epoch [3/10], Iteration [2000/9937], Loss: 8.746410492748023
2024-03-25 20:53:33,775 - INFO - Epoch [3/10], Iteration [3000/9937], Loss: 8.646662827173868
2024-03-25 20:53:35,491 - INFO - Epoch [3/10], Iteration [4000/9937], Loss: 8.539541317231953
2024-03-25 20:53:37,149 - INFO - Epoch [3/10], Iteration [5000/9937], Loss: 8.480774904304743
2024-03-25 20:53:39,012 - INFO - Epoch [3/10], Iteration [6000/9937], Loss: 8.445684844618043
2024-03-25 20:53:40,536 - INFO - Epoch [3/10], Iteration [7000/9937], Loss: 8.391084753279175
2024-03-25 20:53:42,423 - INFO - Epoch [3/10], Iteration [8000/9937], Loss: 8.326431740317494
2024-03-25 20:53:43,794 - INFO - Epoch [3/10], Iteration [9000/9937], Loss: 8.323411281509532
2024-03-25 20:53:46,448 - INFO - Epoch [4/10], Iteration [1000/9937], Loss: 7.8191690979003905
2024-03-25 20:53:47,769 - INFO - Epoch [4/10], Iteration [2000/9937], Loss: 7.796670542627573
2024-03-25 20:53:49,110 - INFO - Epoch [4/10], Iteration [3000/9937], Loss: 7.7835074226458865
2024-03-25 20:53:51,167 - INFO - Epoch [4/10], Iteration [4000/9937], Loss: 7.71278450833261
2024-03-25 20:53:52,524 - INFO - Epoch [4/10], Iteration [5000/9937], Loss: 7.66000596909523
2024-03-25 20:53:54,121 - INFO - Epoch [4/10], Iteration [6000/9937], Loss: 7.671219747334718
2024-03-25 20:53:55,446 - INFO - Epoch [4/10], Iteration [7000/9937], Loss: 7.647232960364648
2024-03-25 20:53:57,027 - INFO - Epoch [4/10], Iteration [8000/9937], Loss: 7.606609088297933
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2024-03-25 20:54:02,491 - INFO - Epoch [5/10], Iteration [2000/9937], Loss: 7.406245704114437
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2024-03-25 20:54:11,279 - INFO - Epoch [5/10], Iteration [9000/9937], Loss: 7.279987414232559
2024-03-25 20:54:14,032 - INFO - Epoch [6/10], Iteration [1000/9937], Loss: 7.156441548585891
2024-03-25 20:54:15,069 - INFO - Epoch [6/10], Iteration [2000/9937], Loss: 7.170494084775448
2024-03-25 20:54:16,115 - INFO - Epoch [6/10], Iteration [3000/9937], Loss: 7.1765502449075385
2024-03-25 20:54:17,425 - INFO - Epoch [6/10], Iteration [4000/9937], Loss: 7.089742800794542
2024-03-25 20:54:18,451 - INFO - Epoch [6/10], Iteration [5000/9937], Loss: 7.061137485784292
2024-03-25 20:54:19,490 - INFO - Epoch [6/10], Iteration [6000/9937], Loss: 7.098453544691205
2024-03-25 20:54:20,523 - INFO - Epoch [6/10], Iteration [7000/9937], Loss: 7.08427997824124
2024-03-25 20:54:21,525 - INFO - Epoch [6/10], Iteration [8000/9937], Loss: 7.056909865798429
2024-03-25 20:54:22,557 - INFO - Epoch [6/10], Iteration [9000/9937], Loss: 7.083032442448868
2024-03-25 20:54:24,592 - INFO - Epoch [7/10], Iteration [1000/9937], Loss: 7.053627436906099
2024-03-25 20:54:25,679 - INFO - Epoch [7/10], Iteration [2000/9937], Loss: 7.054839373618364
2024-03-25 20:54:26,682 - INFO - Epoch [7/10], Iteration [3000/9937], Loss: 7.056034335692724
2024-03-25 20:54:27,674 - INFO - Epoch [7/10], Iteration [4000/9937], Loss: 6.971077359367162
2024-03-25 20:54:28,686 - INFO - Epoch [7/10], Iteration [5000/9937], Loss: 6.946805735287071
2024-03-25 20:54:29,777 - INFO - Epoch [7/10], Iteration [6000/9937], Loss: 6.985242242105305
2024-03-25 20:54:30,775 - INFO - Epoch [7/10], Iteration [7000/9937], Loss: 6.9753796724315205
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2024-03-25 20:54:32,833 - INFO - Epoch [7/10], Iteration [9000/9937], Loss: 6.977208314706882
2024-03-25 20:54:34,822 - INFO - Epoch [8/10], Iteration [1000/9937], Loss: 6.953164694428444
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2024-03-25 20:54:41,756 - INFO - Epoch [8/10], Iteration [7000/9937], Loss: 6.901219688289932
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2024-03-25 20:54:43,983 - INFO - Epoch [8/10], Iteration [9000/9937], Loss: 6.904031275456978
2024-03-25 20:54:46,324 - INFO - Epoch [9/10], Iteration [1000/9937], Loss: 6.898993099451065
```

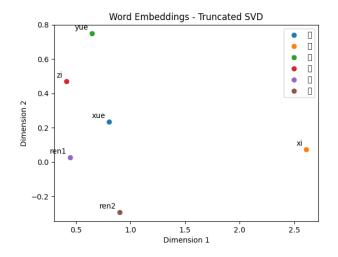
```
2024-03-25 20:54:47,481 - INFO - Epoch [9/10], Iteration [2000/9937], Loss: 6.906684340946376
2024-03-25 20:54:48,515 - INFO - Epoch [9/10], Iteration [3000/9937], Loss: 6.912248115157087
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2024-03-25 20:54:50,621 - INFO - Epoch [9/10], Iteration [5000/9937], Loss: 6.816120096540451
2024-03-25 20:54:51,668 - INFO - Epoch [9/10], Iteration [6000/9937], Loss: 6.857003861963749
2024-03-25 20:54:52,720 - INFO - Epoch [9/10], Iteration [7000/9937], Loss: 6.841727122411132
2024-03-25 20:54:53,772 - INFO - Epoch [9/10], Iteration [8000/9937], Loss: 6.819399756245315
2024-03-25 20:54:54,841 - INFO - Epoch [9/10], Iteration [9000/9937], Loss: 6.850066827166412
2024-03-25 20:54:56,890 - INFO - Epoch [10/10], Iteration [1000/9937], Loss: 6.853593520075083
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2024-03-25 20:54:59,202 - INFO - Epoch [10/10], Iteration [3000/9937], Loss: 6.874045638973514
2024-03-25 20:55:00,339 - INFO - Epoch [10/10], Iteration [4000/9937], Loss: 6.793853316348046
2024-03-25 20:55:01,397 - INFO - Epoch [10/10], Iteration [5000/9937], Loss: 6.774450859573483
2024-03-25 20:55:02,445 - INFO - Epoch [10/10], Iteration [6000/9937], Loss: 6.817693621767064
2024-03-25 20:55:03,480 - INFO - Epoch [10/10], Iteration [7000/9937], Loss: 6.801592555684703
2024-03-25 20:55:04,601 - INFO - Epoch [10/10], Iteration [8000/9937], Loss: 6.779780532353557
2024-03-25 20:55:05,817 - INFO - Epoch [10/10], Iteration [9000/9937], Loss: 6.807230510878067
```

R5:

LSA:



Hyper-parameters:emb size=50, window size=1, k=10



Difference:

LSA:

The horizontal coordinate range is (0, 30), and the vertical coordinate range is (-12, 2).

Vectors of "学","习","人"and"仁" are significantly different from vectors of "子"and "曰"

Vectors of "人"and"仁" are almost the same. Vectors of "学"and "习" are similar.

SkipGram:

The horizontal coordinate range is (0, 3), and the vertical coordinate range is (0, 0.8).

Compared with plot of LS, the six vectors do not differ significantly overall

There are no vectors that are similar or even identical.