WARNING: Logging before flag parsing goes to stderr.

W0529 07:49:34.169934 139766328334208 deprecation.py:323] From /usr/local/lib/python2.7/dist-packages/tensorflow\_core/python/compat/v2\_compat.py:88: disable\_resource\_variables (from tensorflow.python.ops.variable\_scope) is deprecated and will be removed in a future version.

Instructions for updating:

non-resource variables are not supported in the long term

Loading pretrained word vectors from /content/drive/My Drive/NLP Project/LEAR-master/word-vectors/endeitru.txt

665906 vectors loaded from /content/drive/My Drive/NLP Project/LEAR-master/word-vectors/endeitru.txt

SimLex score (Spearman's rho coefficient) of initial vectors is:

SimLex score for english is: 0.706 Original SimLex score is: 0.75 coverage: 998 / 999

SimVerb score for english is: 0.675 coverage: 3490 / 3500

HyperLex score for english is: 0.3 coverage: 2612 / 2616

HyperLex-Nouns score for english is: 0.243 coverage: 2161 / 2163

WordSim score for english is: 0.625 coverage: 348 / 353

Custom Test score for english and cross-lingual is 0.391 coverage: 91 /total(needtocheck)

SimLex score for german is: 0.615 coverage: 934 / 999

WordSim score for german is: 0.605 coverage: 339 / 353

SimLex score for italian is: 0.674 coverage: 984 / 999

WordSim score for italian is: 0.594 coverage: 345 / 353

SimLex score for russian is: 0.612 coverage: 984 / 999

WordSim score for russian is: 0.573 coverage: 327 / 353

Experiment hyperparameters (attract\_margin\_mono, attract\_margin\_cl, repel\_margin, batch\_size, l2\_reg\_constant, max\_iter): 0.6 0.6 0.0 128 1e-09 5.0

W0529 07:52:11.203043 139766328334208 deprecation.py:506] From /usr/local/lib/python2.7/dist-packages/tensorflow\_core/python/training/adagrad.py:76: calling \_\_init\_\_ (from tensorflow.python.ops.init\_ops) with dtype is deprecated and will be removed in a future version.

Instructions for updating:

Call initializer instance with the dtype argument instead of passing it to the constructor

2020-05-29 07:52:11.244223: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcuda.so.1

2020-05-29 07:52:11.301214: I tensorflow/stream\_executor/cuda/cuda\_gpu\_executor.cc:981] successful NUMA node read from SysFS had negative value (-1), but there must be at least one NUMA node, so returning NUMA node zero

2020-05-29 07:52:11.301989: I tensorflow/core/common\_runtime/gpu/gpu\_device.cc:1555] Found device 0 with properties:

pciBusID: 0000:00:04.0 name: Tesla K80 computeCapability: 3.7

coreClock: 0.8235GHz coreCount: 13 deviceMemorySize: 11.17GiB deviceMemoryBandwidth: 223.96GiB/s

2020-05-29 07:52:11.302382: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcudart.so.10.1

2020-05-29 07:52:11.636894: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcublas.so.10

2020-05-29 07:52:11.808830: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcufft.so.10

2020-05-29 07:52:11.838545: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcurand.so.10

2020-05-29 07:52:12.132974: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcusolver.so.10

2020-05-29 07:52:12.157991: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcusparse.so.10

2020-05-29 07:52:12.737064: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcudnn.so.7

2020-05-29 07:52:12.737339: I tensorflow/stream\_executor/cuda/cuda\_gpu\_executor.cc:981] successful NUMA node read from SysFS had negative value (-1), but there must be at least one NUMA node, so returning NUMA node zero

2020-05-29 07:52:12.738224: I tensorflow/stream\_executor/cuda/cuda\_gpu\_executor.cc:981] successful NUMA node read from SysFS had negative value (-1), but there must be at least one NUMA node, so returning NUMA node zero

2020-05-29 07:52:12.739000: I tensorflow/core/common\_runtime/gpu/gpu\_device.cc:1697] Adding visible gpu devices: 0

2020-05-29 07:52:12.780310: I tensorflow/core/platform/profile\_utils/cpu\_utils.cc:94] CPU Frequency: 2300000000 Hz

2020-05-29 07:52:12.780795: I tensorflow/compiler/xla/service/service.cc:168] XLA service 0x56223282e840 initialized for platform Host (this does not guarantee that XLA will be used). Devices:

2020-05-29 07:52:12.780840: I tensorflow/compiler/xla/service/service.cc:176] StreamExecutor device (0): Host, Default Version

2020-05-29 07:52:12.881082: I tensorflow/stream\_executor/cuda/cuda\_gpu\_executor.cc:981] successful NUMA node read from SysFS had negative value (-1), but there must be at least one NUMA node, so returning NUMA node zero

2020-05-29 07:52:12.881919: I tensorflow/compiler/xla/service/service.cc:168] XLA service 0x56223282ebc0 initialized for platform CUDA (this does not guarantee that XLA will be used). Devices:

2020-05-29 07:52:12.881955: I tensorflow/compiler/xla/service/service.cc:176] StreamExecutor device (0): Tesla K80, Compute Capability 3.7

2020-05-29 07:52:12.883411: I tensorflow/stream\_executor/cuda/cuda\_gpu\_executor.cc:981] successful NUMA node read from SysFS had negative value (-1), but there must be at least one NUMA node, so returning NUMA node zero

2020-05-29 07:52:12.884150: I tensorflow/core/common\_runtime/gpu/gpu\_device.cc:1555] Found device 0 with properties:

pciBusID: 0000:00:04.0 name: Tesla K80 computeCapability: 3.7

coreClock: 0.8235GHz coreCount: 13 deviceMemorySize: 11.17GiB deviceMemoryBandwidth: 223.96GiB/s

2020-05-29 07:52:12.884236: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcudart.so.10.1

2020-05-29 07:52:12.884283: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcublas.so.10

2020-05-29 07:52:12.884337: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcufft.so.10

2020-05-29 07:52:12.884379: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcurand.so.10

2020-05-29 07:52:12.884418: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcusolver.so.10

2020-05-29 07:52:12.884460: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcusparse.so.10

2020-05-29 07:52:12.884503: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcudnn.so.7

2020-05-29 07:52:12.884622: I tensorflow/stream\_executor/cuda/cuda\_gpu\_executor.cc:981] successful NUMA node read from SysFS had negative value (-1), but there must be at least one NUMA node, so returning NUMA node zero

2020-05-29 07:52:12.885421: I tensorflow/stream\_executor/cuda/cuda\_gpu\_executor.cc:981] successful NUMA node read from SysFS had negative value (-1), but there must be at least one NUMA node, so returning NUMA node zero

2020-05-29 07:52:12.886160: I tensorflow/core/common\_runtime/gpu/gpu\_device.cc:1697] Adding visible gpu devices: 0

2020-05-29 07:52:12.890174: I tensorflow/stream\_executor/platform/default/dso\_loader.cc:44] Successfully opened dynamic library libcudart.so.10.1

2020-05-29 07:52:12.891861: I tensorflow/core/common\_runtime/gpu/gpu\_device.cc:1096] Device interconnect StreamExecutor with strength 1 edge matrix:

2020-05-29 07:52:12.891902: I tensorflow/core/common\_runtime/gpu/gpu\_device.cc:1102] 0

2020-05-29 07:52:12.891921: I tensorflow/core/common\_runtime/gpu/gpu\_device.cc:1115] 0: N

2020-05-29 07:52:12.897532: I tensorflow/stream\_executor/cuda/cuda\_gpu\_executor.cc:981] successful NUMA node read from SysFS had negative value (-1), but there must be at least one NUMA node, so returning NUMA node zero

2020-05-29 07:52:12.898369: I tensorflow/stream\_executor/cuda/cuda\_gpu\_executor.cc:981] successful NUMA node read from SysFS had negative value (-1), but there must be at least one NUMA node, so returning NUMA node zero

2020-05-29 07:52:12.899112: W tensorflow/core/common\_runtime/gpu/gpu\_bfc\_allocator.cc:39] Overriding allow\_growth setting because the TF\_FORCE\_GPU\_ALLOW\_GROWTH environment variable is set. Original config value was 0.

2020-05-29 07:52:12.899175: I tensorflow/core/common\_runtime/gpu/gpu\_device.cc:1241] Created TensorFlow device (/job:localhost/replica:0/task:0/device:GPU:0 with 10805 MB memory) -> physical GPU (device: 0, name: Tesla K80, pci bus id: 0000:00:04.0, compute capability: 3.7)

2020-05-29 07:52:13.339435: W tensorflow/core/framework/cpu\_allocator\_impl.cc:81] Allocation of 799087200 exceeds 10% of system memory.

2020-05-29 07:52:13.500811: W tensorflow/core/framework/cpu\_allocator\_impl.cc:81] Allocation of 799087200 exceeds 10% of system memory.

2020-05-29 07:52:13.656629: W tensorflow/core/framework/cpu\_allocator\_impl.cc:81] Allocation of 799087200 exceeds 10% of system memory.

2020-05-29 07:52:13.824485: W tensorflow/core/framework/cpu\_allocator\_impl.cc:81] Allocation of 799087200 exceeds 10% of system memory.

2020-05-29 07:52:14.364410: W tensorflow/core/framework/cpu\_allocator\_impl.cc:81] Allocation of 799087200 exceeds 10% of system memory.

Antonym pairs: 124920 Synonym pairs (Symetric/CL): 483281 Synonym pairs (Asym/Mono) 1045271

Running the optimisation procedure for 5 epochs...

Number of batches per epoch: 12916

Starting epoch: 1

SimLex score for english is: 0.669 Original SimLex score is: 0.722 coverage: 998 / 999

SimVerb score for english is: 0.692 coverage: 3490 / 3500

HyperLex score for english is: 0.695 coverage: 2612 / 2616

HyperLex-Nouns score for english is: 0.712 coverage: 2161 / 2163

WordSim score for english is: 0.542 coverage: 348 / 353

Custom Test score for english and cross-lingual is 0.28 coverage: 91 /total(needtocheck)

SimLex score for german is: 0.615 coverage: 934 / 999

WordSim score for german is: 0.605 coverage: 339 / 353

SimLex score for italian is: 0.674 coverage: 984 / 999

WordSim score for italian is: 0.594 coverage: 345 / 353

SimLex score for russian is: 0.612 coverage: 984 / 999

WordSim score for russian is: 0.573 coverage: 327 / 353

Starting epoch: 2 Last epoch took: 207.0 seconds.

SimLex score for english is: 0.676 Original SimLex score is: 0.727 coverage: 998 / 999

SimVerb score for english is: 0.701 coverage: 3490 / 3500

HyperLex score for english is: 0.687 coverage: 2612 / 2616

HyperLex-Nouns score for english is: 0.705 coverage: 2161 / 2163

WordSim score for english is: 0.527 coverage: 348 / 353

Custom Test score for english and cross-lingual is 0.253 coverage: 91 /total(needtocheck)

SimLex score for german is: 0.615 coverage: 934 / 999

WordSim score for german is: 0.605 coverage: 339 / 353

SimLex score for italian is: 0.674 coverage: 984 / 999

WordSim score for italian is: 0.594 coverage: 345 / 353

SimLex score for russian is: 0.612 coverage: 984 / 999

WordSim score for russian is: 0.573 coverage: 327 / 353

Starting epoch: 3 Last epoch took: 181.5 seconds.

SimLex score for english is: 0.676 Original SimLex score is: 0.724 coverage: 998 / 999

SimVerb score for english is: 0.706 coverage: 3490 / 3500

HyperLex score for english is: 0.688 coverage: 2612 / 2616

HyperLex-Nouns score for english is: 0.708 coverage: 2161 / 2163

WordSim score for english is: 0.534 coverage: 348 / 353

Custom Test score for english and cross-lingual is 0.254 coverage: 91 /total(needtocheck)

SimLex score for german is: 0.615 coverage: 934 / 999

WordSim score for german is: 0.605 coverage: 339 / 353

SimLex score for italian is: 0.674 coverage: 984 / 999

WordSim score for italian is: 0.594 coverage: 345 / 353

SimLex score for russian is: 0.612 coverage: 984 / 999

WordSim score for russian is: 0.573 coverage: 327 / 353

Starting epoch: 4 Last epoch took: 180.6 seconds.

SimLex score for english is: 0.684 Original SimLex score is: 0.733 coverage: 998 / 999

SimVerb score for english is: 0.703 coverage: 3490 / 3500

HyperLex score for english is: 0.683 coverage: 2612 / 2616

HyperLex-Nouns score for english is: 0.703 coverage: 2161 / 2163

WordSim score for english is: 0.51 coverage: 348 / 353

Custom Test score for english and cross-lingual is 0.266 coverage: 91 /total(needtocheck)

SimLex score for german is: 0.615 coverage: 934 / 999

WordSim score for german is: 0.605 coverage: 339 / 353

SimLex score for italian is: 0.674 coverage: 984 / 999

WordSim score for italian is: 0.594 coverage: 345 / 353

SimLex score for russian is: 0.612 coverage: 984 / 999

WordSim score for russian is: 0.573 coverage: 327 / 353

Starting epoch: 5 Last epoch took: 191.4 seconds.

SimLex score for english is: 0.684 Original SimLex score is: 0.735 coverage: 998 / 999

SimVerb score for english is: 0.706 coverage: 3490 / 3500

HyperLex score for english is: 0.683 coverage: 2612 / 2616

HyperLex-Nouns score for english is: 0.704 coverage: 2161 / 2163

WordSim score for english is: 0.517 coverage: 348 / 353

Custom Test score for english and cross-lingual is 0.256 coverage: 91 /total(needtocheck)

SimLex score for german is: 0.615 coverage: 934 / 999

WordSim score for german is: 0.605 coverage: 339 / 353

SimLex score for italian is: 0.674 coverage: 984 / 999

WordSim score for italian is: 0.594 coverage: 345 / 353

SimLex score for russian is: 0.612 coverage: 984 / 999

WordSim score for russian is: 0.573 coverage: 327 / 353

SimLex score (Spearman's rho coefficient) of the final vectors is:

SimLex score for english is: 0.684 Original SimLex score is: 0.735 coverage: 998 / 999

SimVerb score for english is: 0.706 coverage: 3490 / 3500

HyperLex score for english is: 0.683 coverage: 2612 / 2616

HyperLex-Nouns score for english is: 0.704 coverage: 2161 / 2163

WordSim score for english is: 0.517 coverage: 348 / 353

Custom Test score for english and cross-lingual is 0.256 coverage: 91 /total(needtocheck)

SimLex score for german is: 0.615 coverage: 934 / 999

WordSim score for german is: 0.605 coverage: 339 / 353

SimLex score for italian is: 0.674 coverage: 984 / 999

WordSim score for italian is: 0.594 coverage: 345 / 353

SimLex score for russian is: 0.612 coverage: 984 / 999

WordSim score for russian is: 0.573 coverage: 327 / 353

Printed 665906 word vectors to: /content/drive/My Drive/NLP Project/LEAR-master/results/wv\_final.txt