

LAPORAN AKHIR PRAKTIKUM

Mata Praktikum : Kecerdasan Artificial
Kelas : 3IA11
Praktikum ke- : 4
Tanggal : 6/11/2024
Materi : Pre – trained Model
NPM : 51422161
Nama : MUHAMMAD TARMIDZI BARIQ
Ketua Asisten : Gilbert Jefferson Faozato Mendrofa
Paraf Asisten :
Nama Asisten : Filbert
Jumlah Lembar : 4 Lembar



LABORATORIUM TEKNIK INFORMATIKA

UNIVERSITAS GUNADARMA

2024

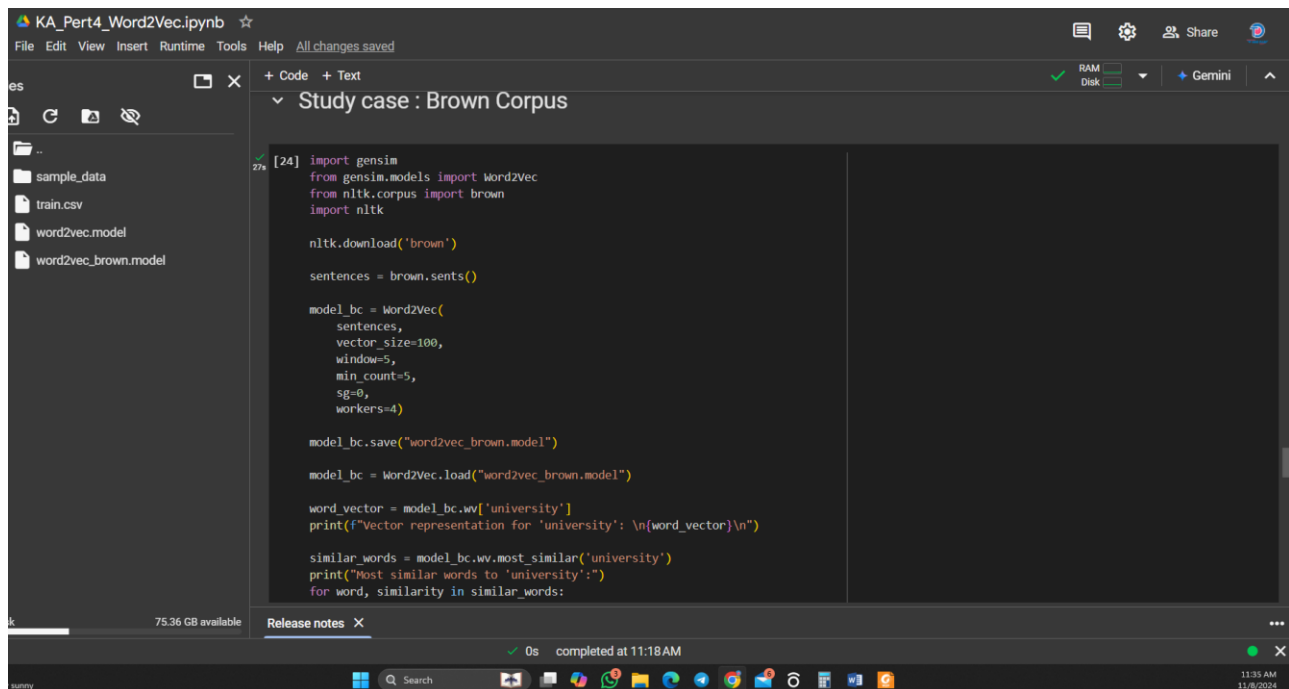
LISTING PROGRAM

(Copy koding yang sudah dikerjakan)

1. Sebutkan alasan untuk menggunakan pre-trained model dibanding dengan Traditional machine learning?

- Efisiensi Waktu dan Sumber Daya, Karena model sudah dilatih sebelumnya, kita tidak perlu menghabiskan waktu dan sumber daya yang besar
- Kinerja yang Baik, Pre-trained model sering kali sudah menguasai banyak pola dan fitur dari dataset besar, sehingga bisa memberikan performa yang baik bahkan pada tugas-tugas baru.
- Banyak pre-trained models yang tersedia secara gratis atau dalam bentuk open source, sehingga mudah diakses oleh para peneliti dan praktisi.

2. Jalankan Study Case: Brown Corpus dan screenshot output programnya



```
[24] import gensim
from gensim.models import Word2Vec
from nltk.corpus import brown
import nltk

nltk.download('brown')

sentences = brown.sents()

model_bc = Word2Vec(
    sentences,
    vector_size=100,
    window=5,
    min_count=5,
    sg=0,
    workers=4)

model_bc.save("word2vec_brown.model")

model_bc = Word2Vec.load("word2vec_brown.model")

word_vector = model_bc.wv['university']
print(f"Vector representation for 'university': \n{word_vector}\n")

similar_words = model_bc.wv.most_similar('university')
print("Most similar words to 'university':")
for word, similarity in similar_words:
```

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```
KA_Pert4_Word2Vec.ipynb ☆
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+ Code + Text
[24] print(f"Vector representation for 'university': \n{word_vector}\n")

similar_words = model_bc.wv.most_similar('university')
print("Most similar words to 'university':")
for word, similarity in similar_words:
    print(f"{word}: {similarity:.4f}")

result = model_bc.wv.most_similar(positive=['woman', 'king'], negative=['man'])
print("\n'woman' is to 'king' as 'man' is to: ", result[0][0])

[nltk_data] Downloading package brown to /root/nltk_data...
[nltk_data] Package brown is already up-to-date!
Vector representation for "university":
[ 0.11178687  0.25662348  0.2807412   0.11151244 -0.0641061  -0.33389144
  0.20333874  0.34786426 -0.306428   -0.28290862  0.16903412 -0.22784984
  0.1907381   0.16695768  0.24302657 -0.16311403  0.26989284 -0.14479066
 -0.52295226 -0.5173123   0.28516587 -0.1150838   0.4835528   0.07662863
 -0.05929186 -0.13336068 -0.23006742  0.01812102 -0.210246   0.23430617
  0.21666342 -0.06739294  0.28101176 -0.3706113   -0.17732641  0.05778665
 -0.18914899 -0.05372512 -0.34407577 -0.05939307  0.0125817  -0.2684853
  0.1795215   0.11458798  0.20349385 -0.0087141   -0.01914219 -0.02472949
  0.09938662  0.31110337  0.01639063 -0.28594205 -0.25119504 -0.18946075
 -0.10753842 -0.22974735  0.17715676  0.05196818 -0.06179871 -0.07911316
  0.02930142  0.20069219 -0.03761724 -0.16888516 -0.18953073  0.45268598
  0.02242129  0.2842278   -0.263337   0.36999738  0.2053268   0.1466345
  0.21740769 -0.00282213  0.33464643  0.0895524   0.10752183  0.0470067
  0.02944636 -0.12975514 -0.11887612  0.01158915 -0.21719058  0.07343658
 -0.18612084 -0.01759829  0.18959609  0.01774068  0.16602805  0.07594538
  0.42526135 -0.15207635 -0.12002116  0.11272381  0.32320616  0.11949045
  0.16764846 -0.36421415 -0.15244195  0.05197432]
```

```
KA_Pert4_Word2Vec.ipynb ☆
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+ Code + Text
[24] 0.02242129 0.2842278 -0.263337 0.36999738 0.2053268 0.1466345
0.21740769 -0.00282213 0.33464643 0.0895524 0.10752183 0.0470067
0.02944636 -0.12975514 -0.11887612 0.01158915 -0.21719058 0.07343658
-0.18612084 -0.01759829 0.18959609 0.01774068 0.16602805 0.07594538
0.42526135 -0.15207635 -0.12002116 0.11272381 0.32320616 0.11949045
0.16764846 -0.36421415 -0.15244195 0.05197432]

Most similar words to 'university':
membership: 0.9544
profession: 0.9534
neighborhood: 0.9529
congregation: 0.9513
selection: 0.9482
residence: 0.9455
inception: 0.9406
seam: 0.9405
score: 0.9402
instruction: 0.9401

'woman' is to 'king' as 'man' is to: sold

[25] model_bc.wv.most_similar('small')

[('high', 0.897130012512207),
 ('large', 0.8941992117322458),
 ('white', 0.8158899545669556),
 ('wide', 0.8021131753921509),
 ('low', 0.7808263097895813),
 ('single', 0.7793121337890625),
 ('variety', 0.7760580778121948),
 ('spectator', 0.7753939032554626),
 ('group', 0.7697349190711975),
 ('covered', 0.7681851983070374)]
```

KA_Pert4_Word2Vec.ipynb

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Files

- sample_data
- train.csv
- word2vec.model
- word2vec_brown.model

```
[25] ('low', 0.7888263897895813),
      ('single', 0.779312133789625),
      ('variety', 0.7760580778121948),
      ('spectator', 0.7753929032554626),
      ('group', 0.7697349198711975),
      ('covered', 0.7681851983070374)]

[26] model_bc.wv.most_similar('governor')

[('Nixon', 0.9781160354614258),
 ('Senator', 0.9701253175735474),
 ('Peter', 0.9672677516937256),
 ('Albert', 0.9671208262443542),
 ('veteran', 0.9660670161247253),
 ('Carroll', 0.9631392955780029),
 ('Truman', 0.9626258611679877),
 ('successor', 0.96240371465668298),
 ('pianist', 0.9622499346733093),
 ('Stevens', 0.9621646404266357)]

[27] model_bc.wv.most_similar('big')

[('horse', 0.8338404297828674),
 ('fine', 0.8276166319847107),
 ('standing', 0.8268215656280518),
 ('gesture', 0.824590265750885),
 ('fuzzy', 0.8219298124313354),
 ('glass', 0.8216327428817749),
 ('figure', 0.821037232875824),
 ('bit', 0.8193718194961548),
 ('moving', 0.8176400661468506),
 ('niece', 0.8175822496414185)]
```

Release notes

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Files

- sample_data
- train.csv
- word2vec.model
- word2vec_brown.model

```
(('moving', 0.8176400661468506),
 ('piece', 0.8175822496414185)]

[28] model_bc.wv.most_similar('artificial')

[('mechanical', 0.9720488786697388),
 ('experimental', 0.9712285995483398),
 ('massive', 0.9705030918121338),
 ('occasional', 0.9690176678657532),
 ('asset', 0.9662132263183594),
 ('vigorous', 0.9661239385604858),
 ('contained', 0.9658364518165588),
 ('comprehensive', 0.9647703170776367),
 ('assessment', 0.9646508097648621),
 ('specialist', 0.9645661115646362)]

[29] model_bc.wv.most_similar('intelligence')

[('collective', 0.9717608094215393),
 ('stockholders', 0.9702608585357666),
 ('underground', 0.969995582618713),
 ('conversion', 0.9696246304512024),
 ('transition', 0.965078592300415),
 ('practices', 0.9642177820205688),
 ('destruction', 0.9642143845558167),
 ('display', 0.963937520988035),
 ('electricity', 0.9633990526199341),
 ('entertainment', 0.9625459313392639)]
```

Start coding or generate with AI.

Release notes

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