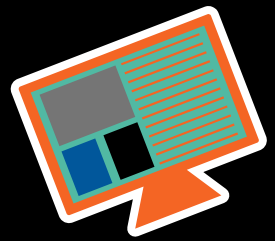
Hacking the Data Science Resume

Garreth Cline



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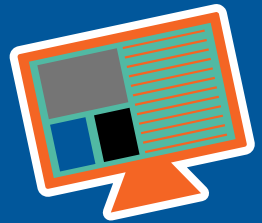
BACKGROUND



A LITTLE BACKGROUND

AI GENERATES JOBS

Gartner expects to see 2.3 million jobs starting in 2021

LOTS OF DATA

90% of the world's data was generated within the past two years alone

LOTS OF JOBS

Fifty Thousand Jobs

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GOAL

Recommends what are important skills, based on job descriptions.

- Helps the user keep up with new trends
- Helps the user understand differences in job titles

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The data I used was scraped from Indeed.com

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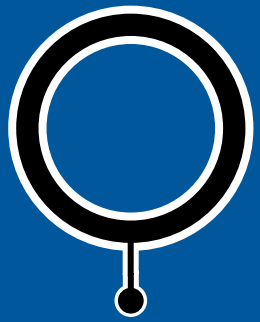
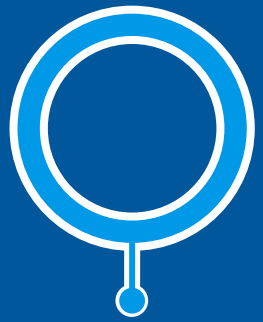
METHODS USED



SUPERVISED LEARNING



UNSUPERVISED LEARNING

NATURAL LANGUAGE PROCESSING

DATA CLEANING

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Features

Features

SQL, Python Ect.

Each one is split and is on its own

Job Description

Used a TfidfVectorizer to make the words into useable data

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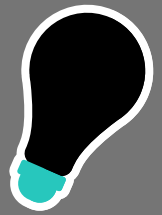
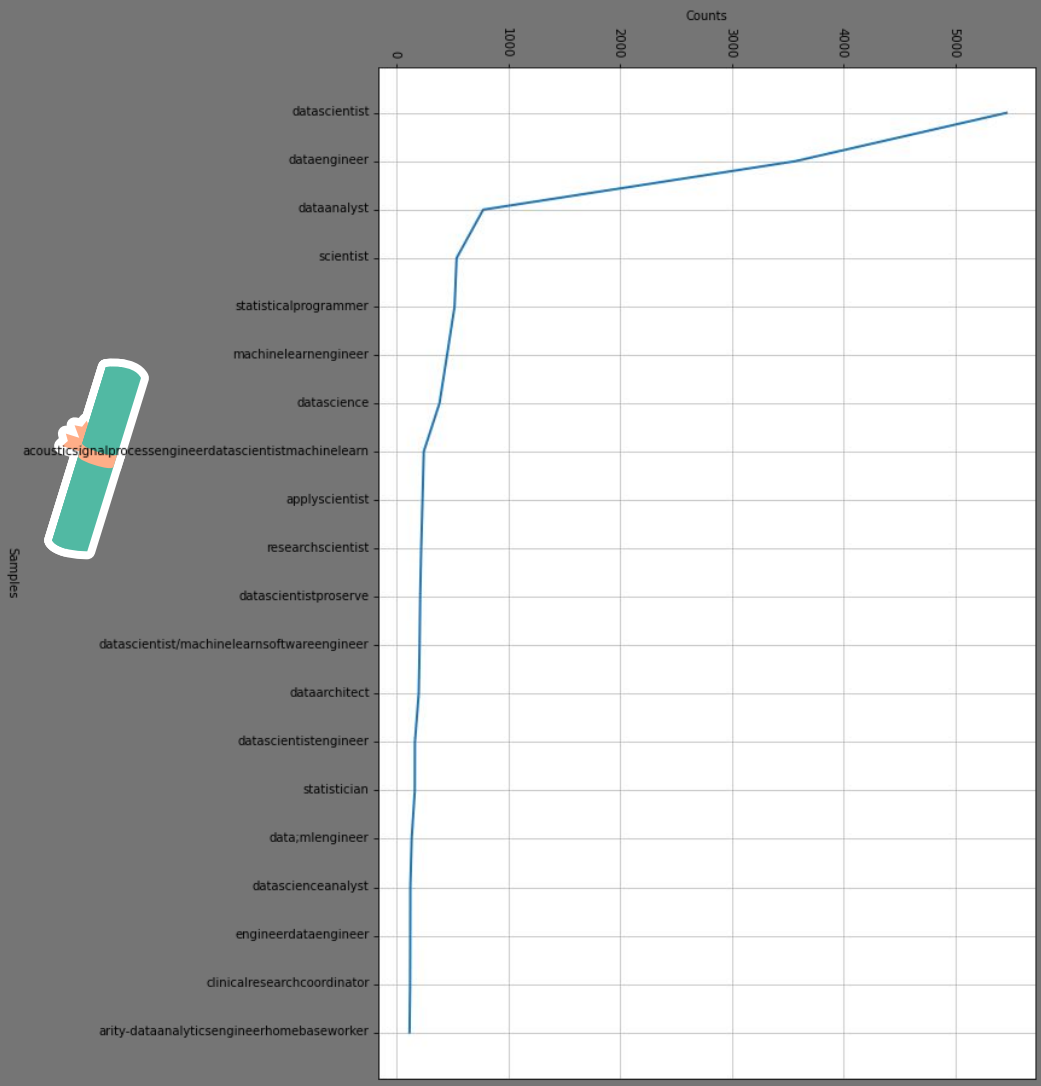
02

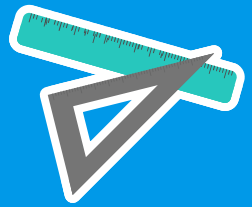
DATA




Counts
0
1000
2000
3000
4000
5000
Samples
datascientist
dataengineer
dataanalyst
scientist
statisticalprogrammer
machinelearnengineer
datascience
acousticsignalprocessengineerdatascientistmachinelearn
applyscientist
researchscientist
datascientistproserve
datascientist/machinelearnsoftwareengineer
dataarchitect
datascientistengineer
statistician
data;mlengineer
datascienceanalyst
engineerdataengineer
clinicalresearchcoordinator
arity-dataanalyticsengineerhomebaseworker

03

THE MODELS



Scores

$$J(A,B) = \frac{|A \cap B|}{|A \cup B|}$$

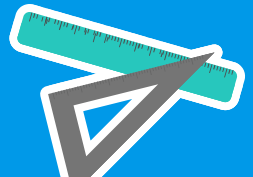
JACCARD SCORE

Jaccard similarity coefficient - size of the intersection divided by the size of the union of two label

$$\frac{1}{|N| \cdot |L|} \sum_{i=1}^{|N|} \sum_{j=1}^{|L|} \operatorname{xor}(y_{i,j}, z_{i,j})$$

HAMMING LOSS

the fraction of the wrong labels to the total number of labels



MODEL PLACEHOLDER

DESC

JACCARD SCORE

HAMMING LOSS

03

| Confusion Matrix |

[[2742 91]
 [78 1028]]

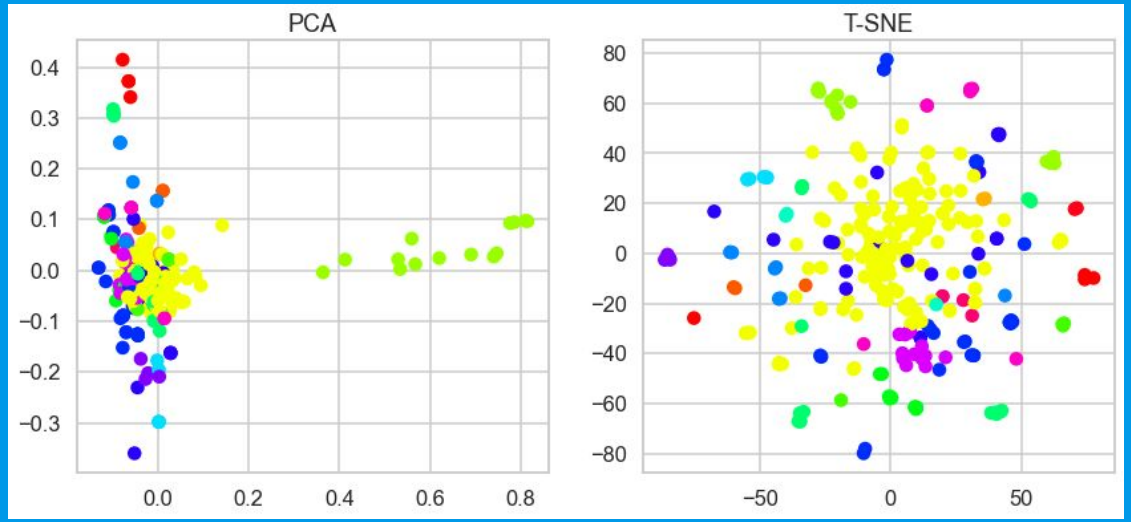
| Precision | Recall | F1 |

Precision Score: 0.95
F1 Score: 0.95
Recall Score: 0.95

| What title words are significant |

datascientist: algorithms vastly link div nine predictive python statistics ser unlimited

CLUSTERING


PCA
0.4
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
0.0
0.2
0.4
0.6
0.8
T-SNE
80
60
40
20
0
−20
−40
−60
−80
−50
0
50