

CHAPTER 3: DIMENSION REDUCTION

LORE

With the breath restored, and the villagers feasting on the mushrooms. It was time to continue working. The farmers returned to their fields. The carpenters opened up shop. Time passed. The knights of ACME started to wonder if they had driven off Ecolenor for good.

With every passing day they grew more sure that they had won. However, what they didn't know was that Ecolenor was concocting a spell of such magnitude, it could shatter the world.

"Behold! Time has come when friend and foe, odd to the eye they show. One face now, another then, reduced to tears of what had been."

WELCOME!

BRAVE KNIGHTS

Ecolenor has cast a spell of changing. People are not who they were. There are many complaints in the town square. The mayor elected by the CCC is collecting the data on who complains, and what they complain about. Because of the large number of complaints, the dimensions are too much to handle, and everyone can't be put back the way they were by the knights!

Your job is to use cross validation to see how much more effective reducing the dimension is on predicting the rating of the complaint. Ecolenor won't get away with this!

HELPFUL SPELLS

SKLEARN

Your spell book section on dimension reduction and cross validation

```
from sklearn.decomposition import PCA
from sklearn.model_selection import
    cross_validate
```

```
from sklearn.ensemble import
    AdaBoostRegressor
```

```
import pandas as pd
from pydataset import data
import matplotlib.pyplot as plt
plt.style.use("ggplot")
```

```
df =data("attitude")
```

STR	DEX	CON	INT	WIS	CHA
8 (-1)	10 (+0)	10 (+0)	14 (+2)	14 (+2)	12 (+1)

Senses —

Languages Python

Challenge 100% accuracy

ACTIONS

Cross Validate. Powerful spell that does train test split and averaging for you

Decomposition. To better understand the terrible effect of the spell of changing you need to reduce the dimension of complaints through decomposition. Using PCA will be fast and help you make the proper decisions to get everything sorted out.

INCANTATION PREPARATION

JUPYTER NOTEBOOK

4th-level discernment

Casting Time: < 5 hours

Range: SSH distance

Components: Python3 and dependencies

Duration: Until dispelled

Your job is to report on your findings about decomposition regression results vs using the full dataset. Is it faster to use this method?



POST SPELL

After people are returned to their original state the knights decide to bring everyone together. They must make a stand against Ecolenor or forever be on the defensive.

"We're moving out! Cluster together, we're going to defeat this warlock, if it ends us"