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Doğrusal ve Polinomal Regresyon



Burak Uğur · Follow

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Regresyon Nedir?

İki yada daha fazla değişken arasındaki ilişkiyi analiz etme metodudur.

x=Bağımsız değişken y=Bağımlı değişken

1-Doğrusal Regresyon(Linear Regression)

$$Y_i = \beta_0 + \beta_1 X_i$$

Şeklinde formülize edilir.Burada amaç y değerine en yakın sonuçlar üretecek β katsayılarını bulmaktır.

PYTHON Kodlaması:

```
from sklearn.linear_model import LinearRegression
```

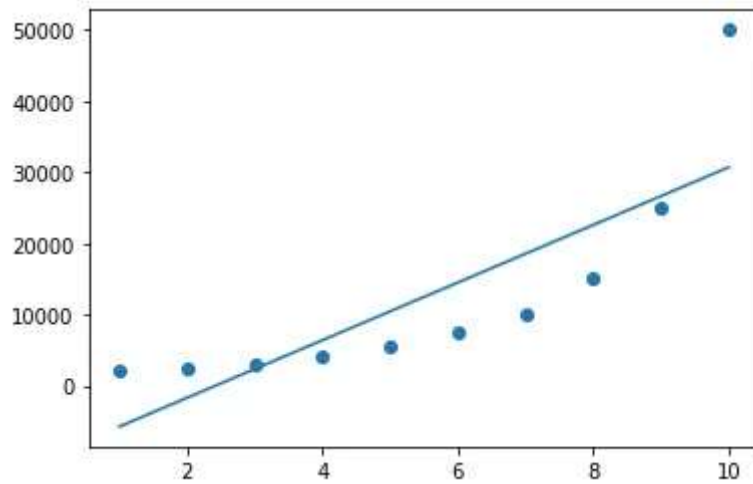
Sklearn modülü içinden,LinearRegression methodu çağırıldı

```
lr=LinearRegression()
```

LinearRegression methodu tanımlandı

```
lr.fit(x,y)
```

.fit() öğren demektir.



2-Polinomal Regresyon(Polynomial Regression)

Değişkenler arasındaki ilişki doğrusal olmadığı durumlarda başvurulacak analiz metodudur.

$$\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_i X_i$$

Amacımız gene β katsayılarını bulmaktır.

PYTHON Kodlaması:

```
from sklearn.preprocessing import PolynomialFeatures
```

Sklearn modülü içinden,PolynomialFeatures methodu çağırıldı

```
pr=PolynomialFeatures(degree = 2)
```

Derecesi '2' olan polinom parametere olarak verildi

```
x_pr=pr.fit_transform(x.values)
```

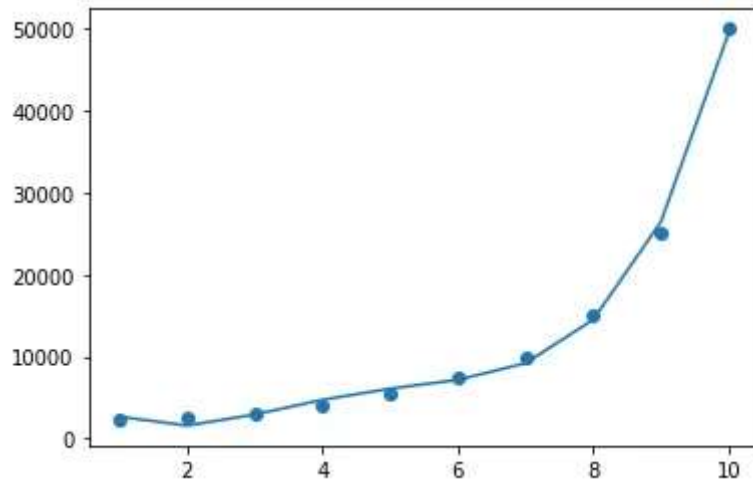
.fit_transform öğren ve veriyi değiştir anlamına gelir

```
lr2=LinearRegression()
```

Dönüştürülmüş veriyi kullanarak yeniden linear Reg. tanımlıyoruz

```
lr2.fit(x_pr,y)
```

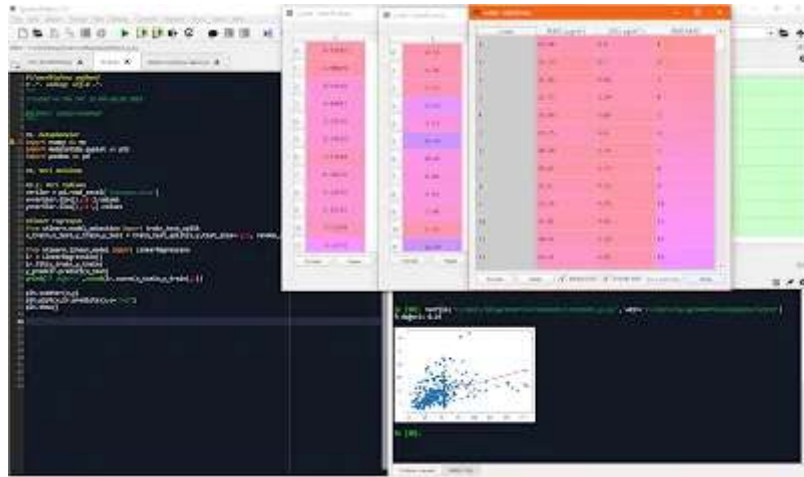
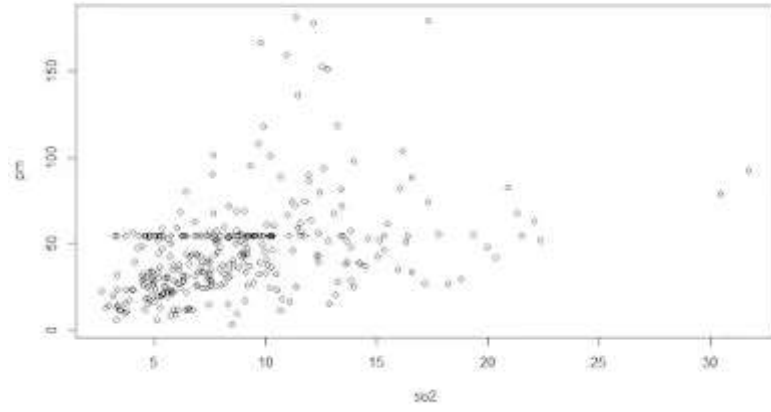
Yeni regresyonu dönüştürülmüş veri ile eğitiyoruz



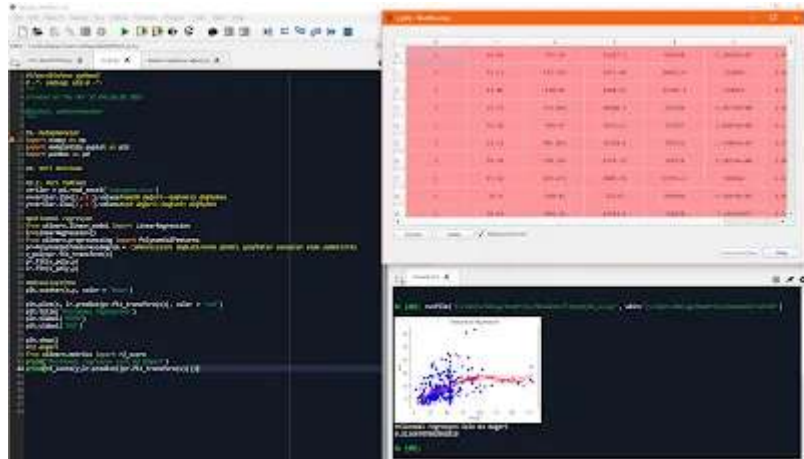
Örnek

Görev: T.C. Çevre Ve Şehircilik Bakanlığı'nın sitesinden çekilen verilere göre regresyon analizi yapmak.

*Veri setini [burdan](#) indirebilirsiniz.



Lineer Model



Polynomial Model

Lineer Regresyon Python kodlarına ulaşmak için [tıklayınız.](#)

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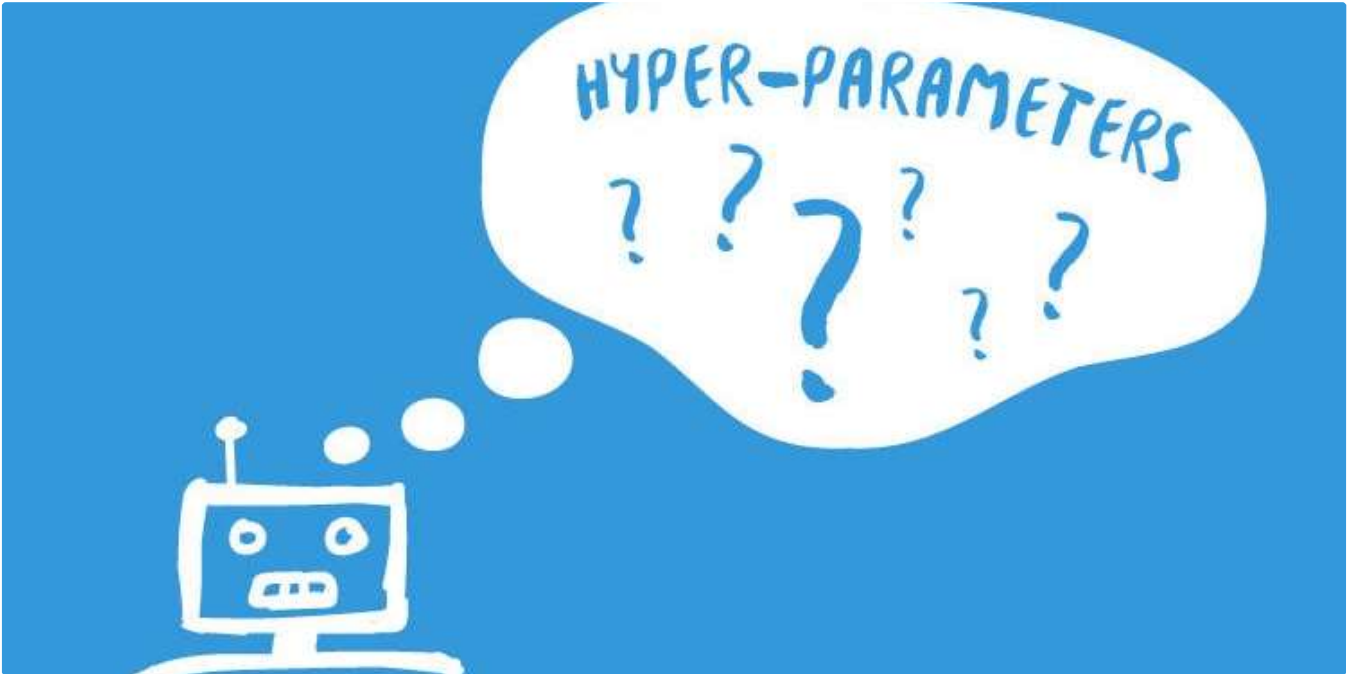
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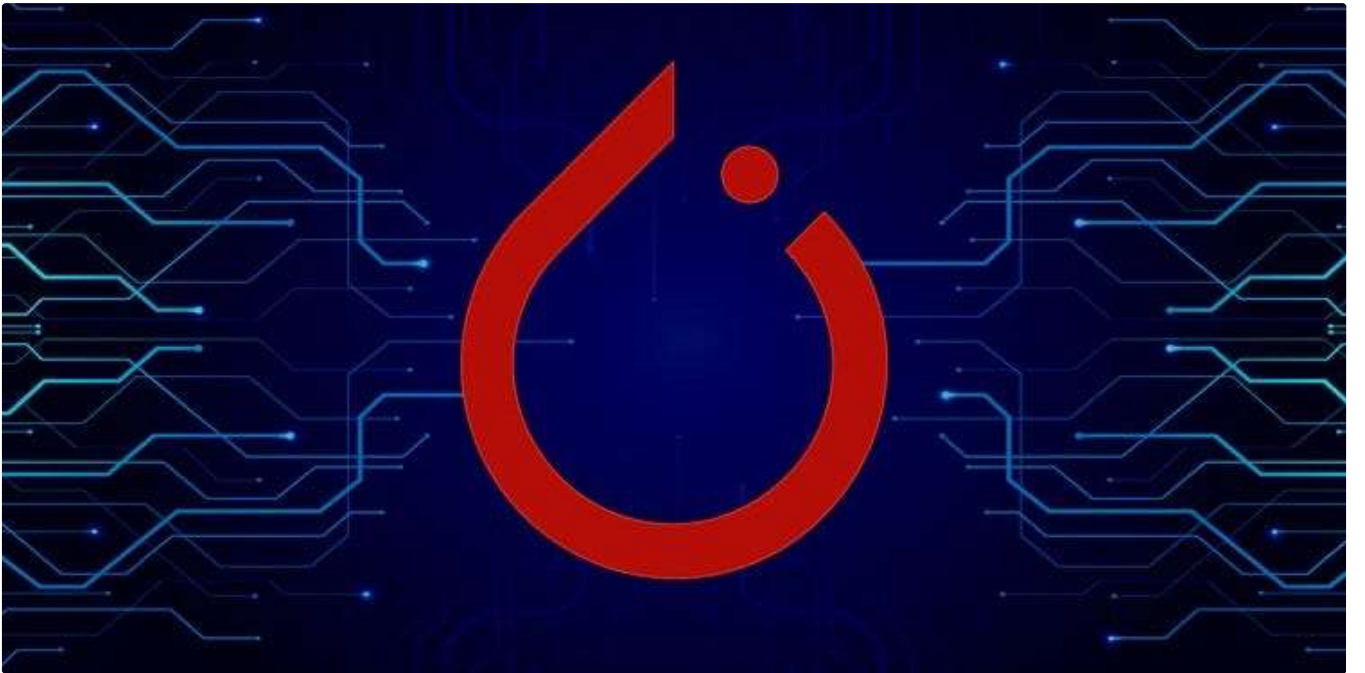
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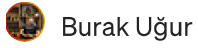


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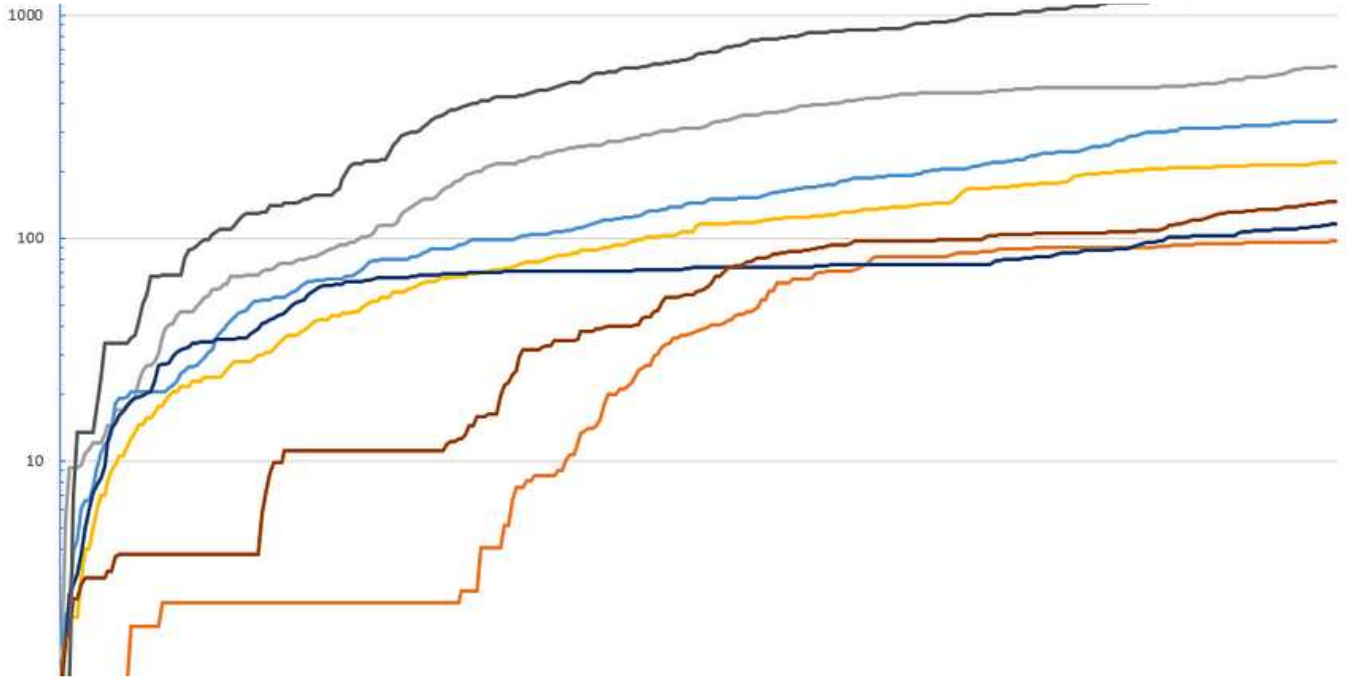
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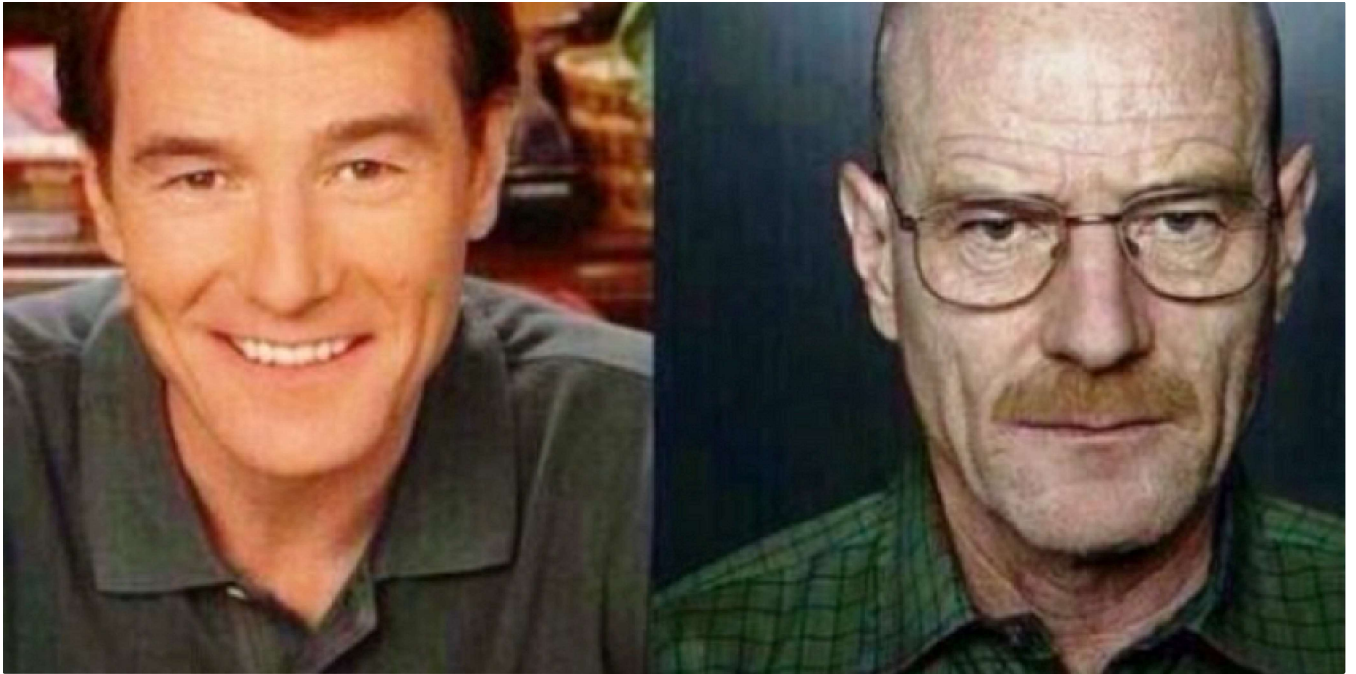


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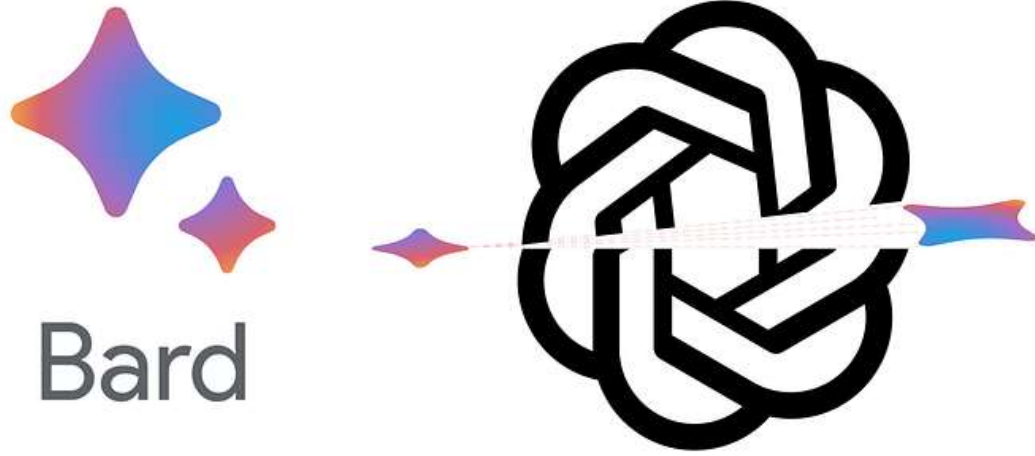
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But companies still need `_agility_`. Real agility. That has been our focus.

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That's why Agile 2, which reimaged what "Agile" should have been,



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