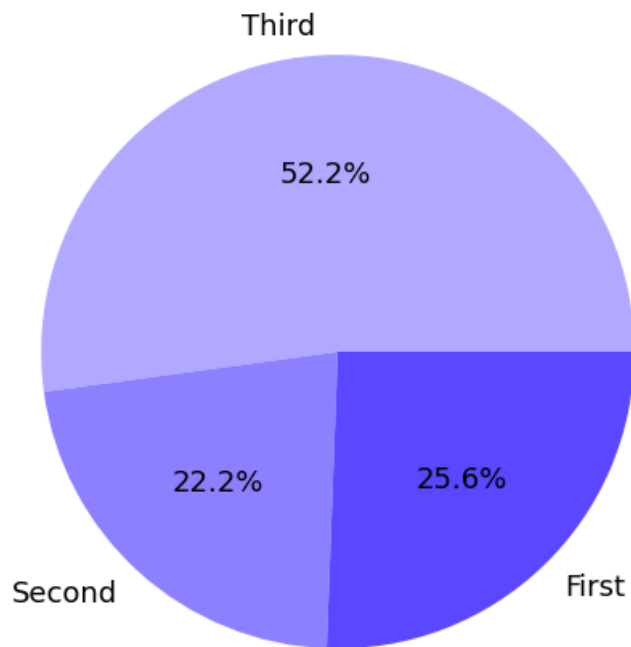


Data Visualizations

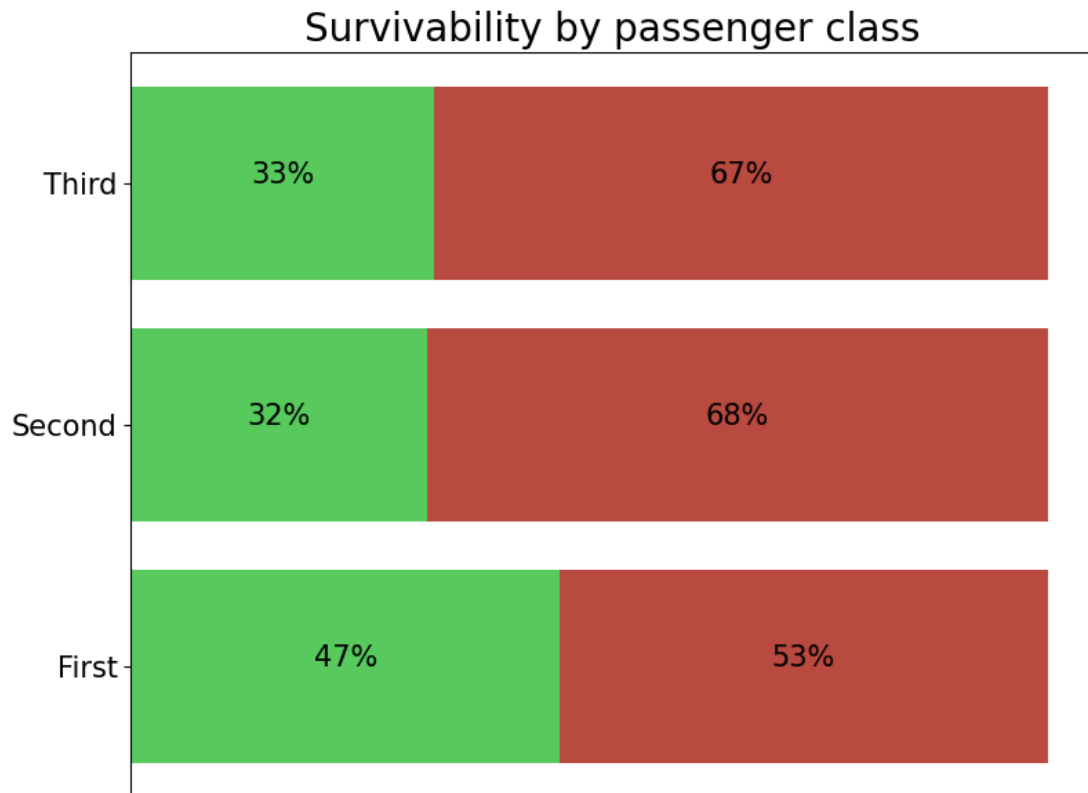
Proportions

Pie chart

Passengers classes proportions

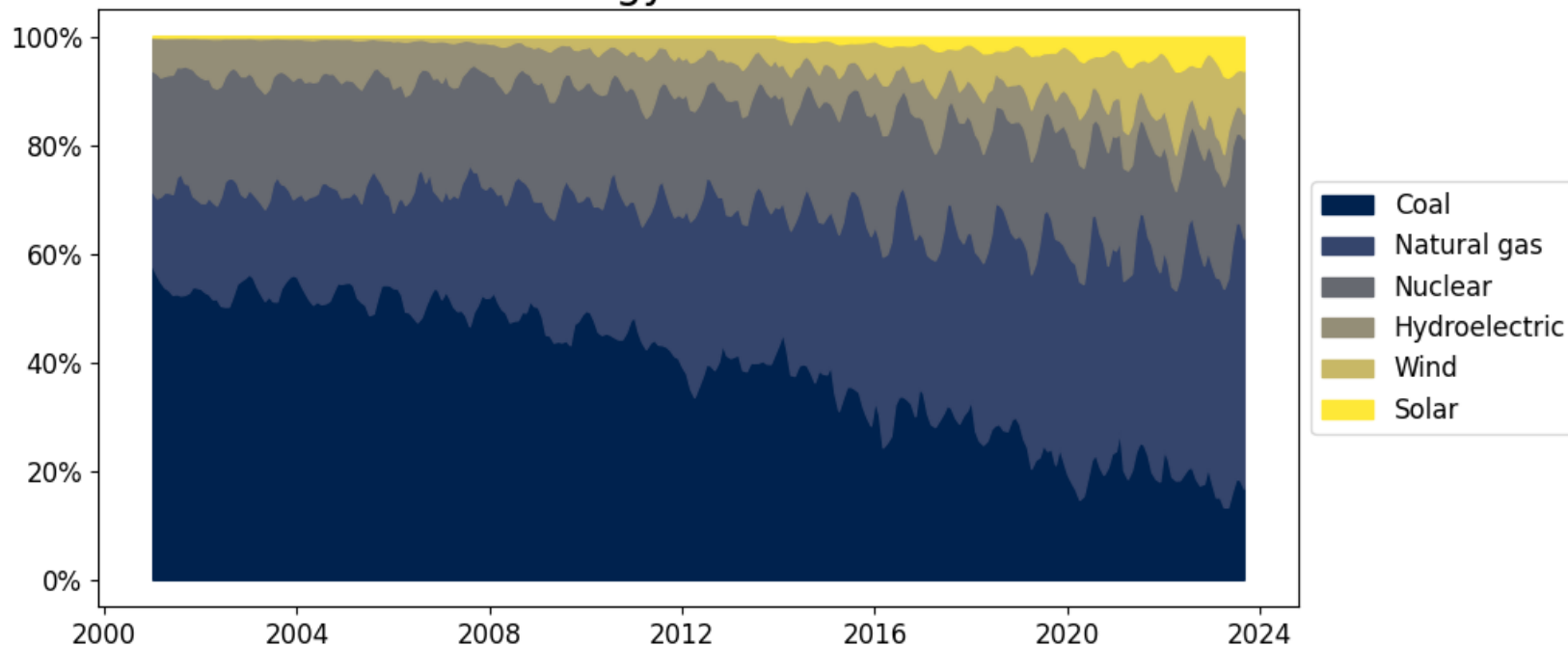


Bar chart



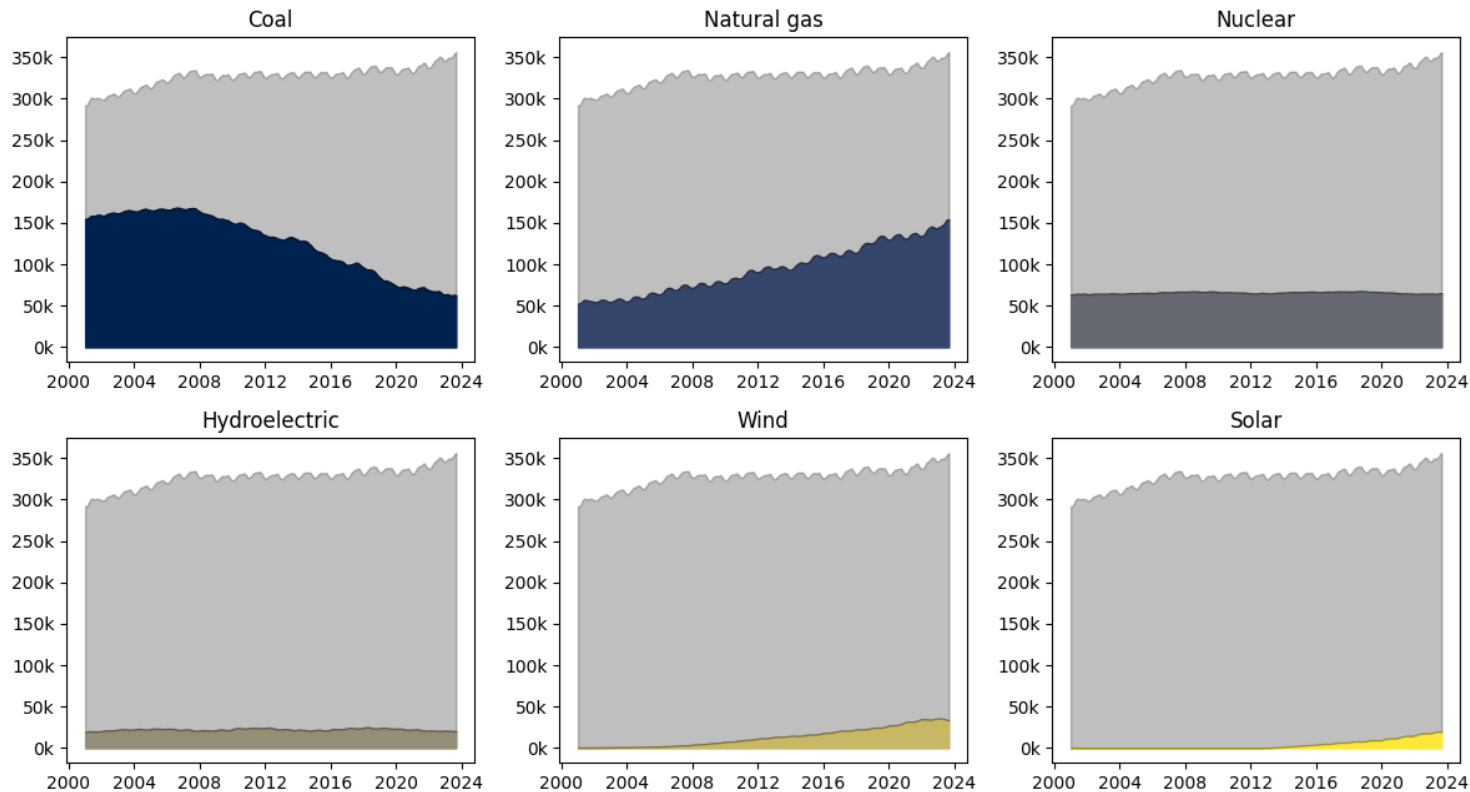
Stacked density plot

USA energy mix over time



Stacked density plot

USA energy mix over time (in megawatt-hours)



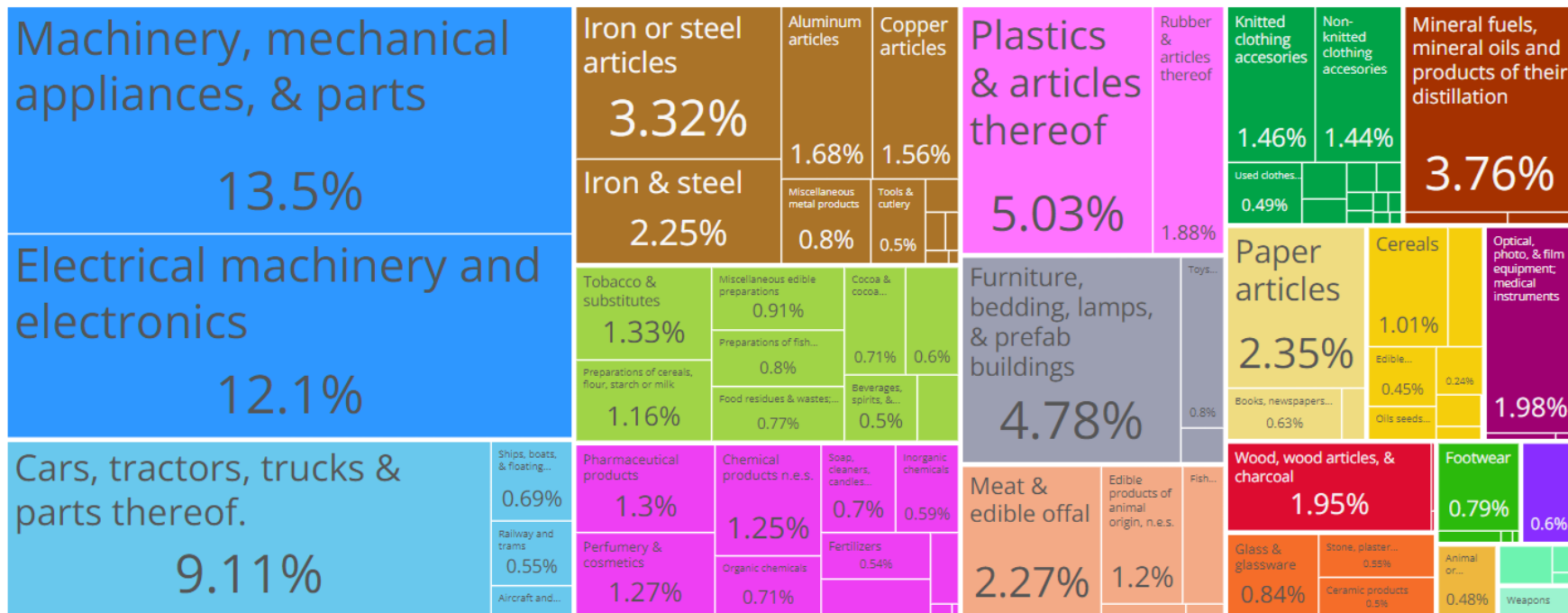
Treemap

USA energy mix



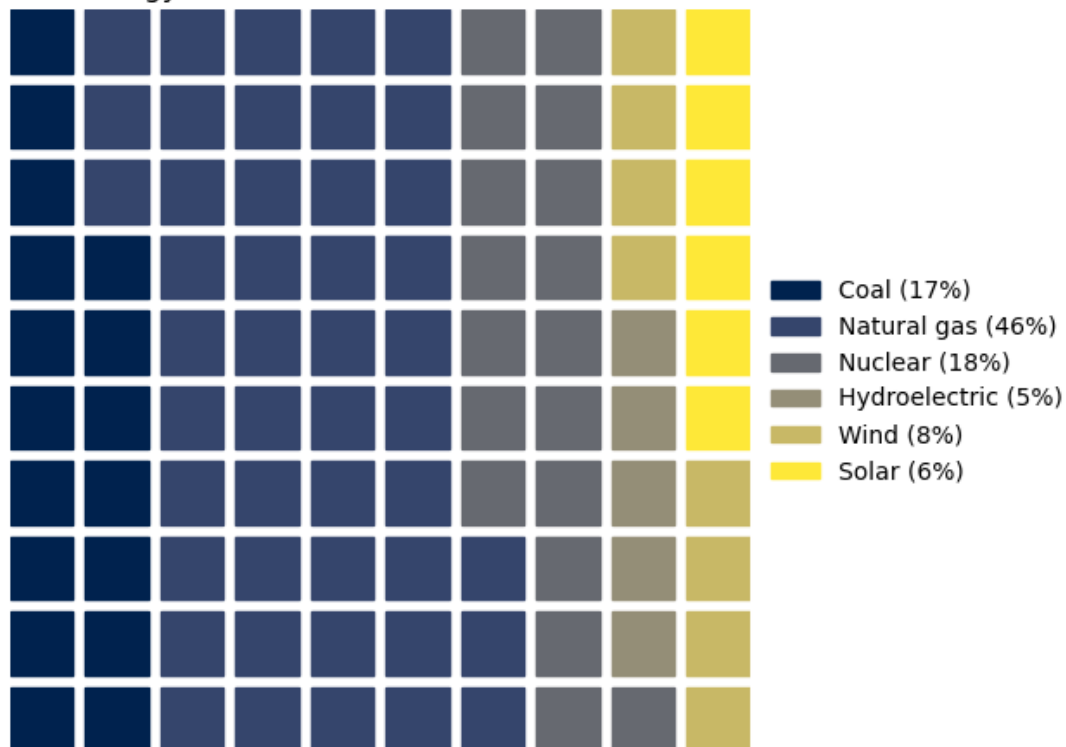
What does Poland export? (2022)

Total: \$346B



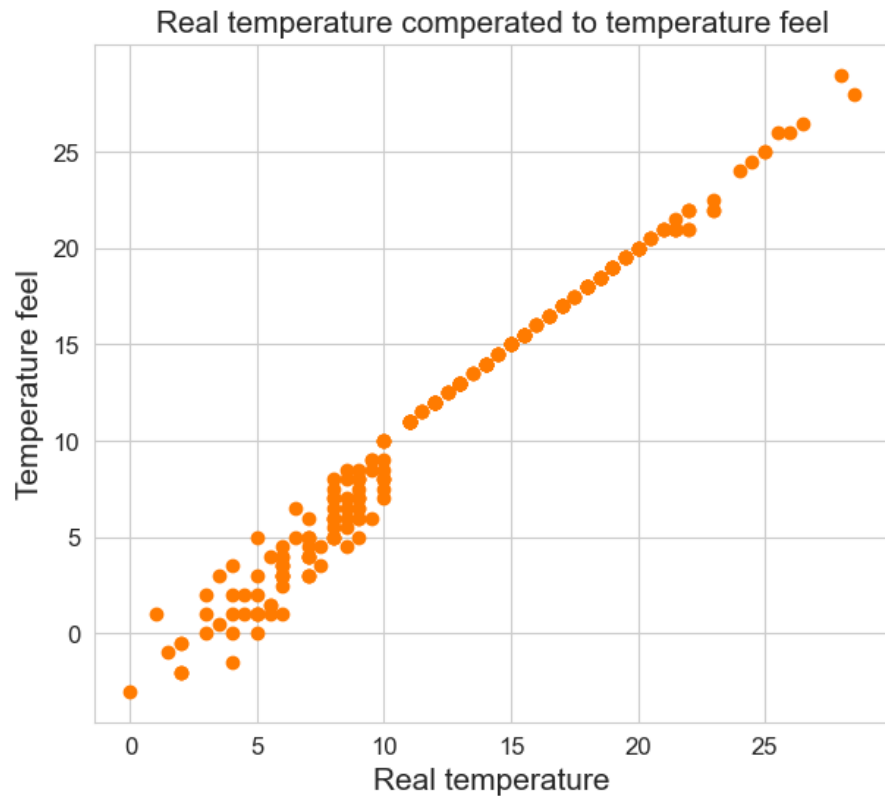
Waffle

USA energy mix

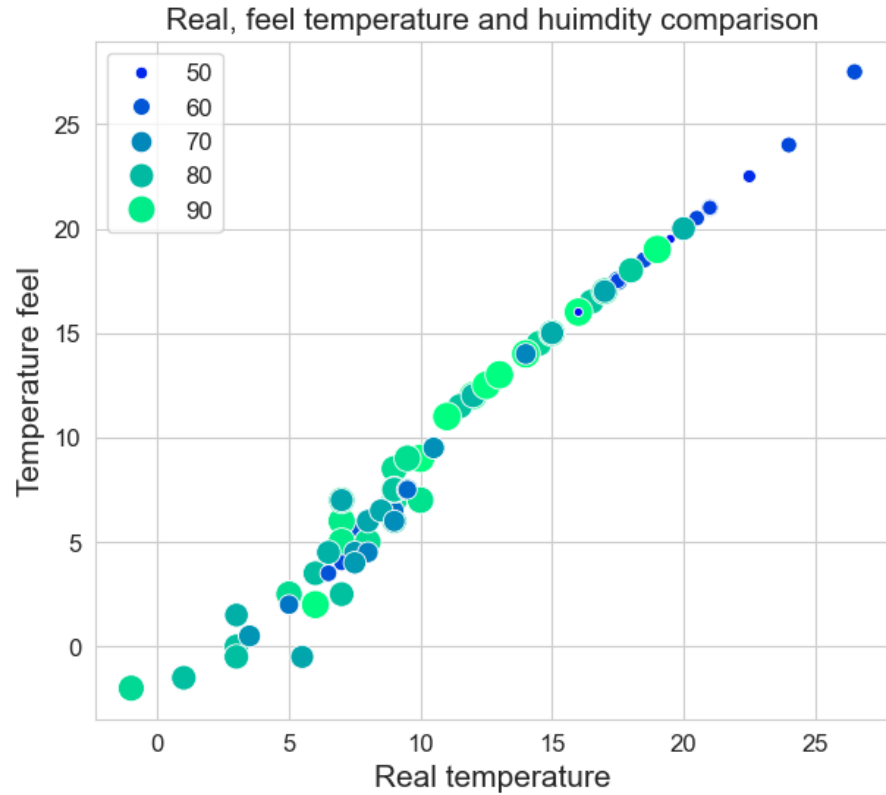


Connections

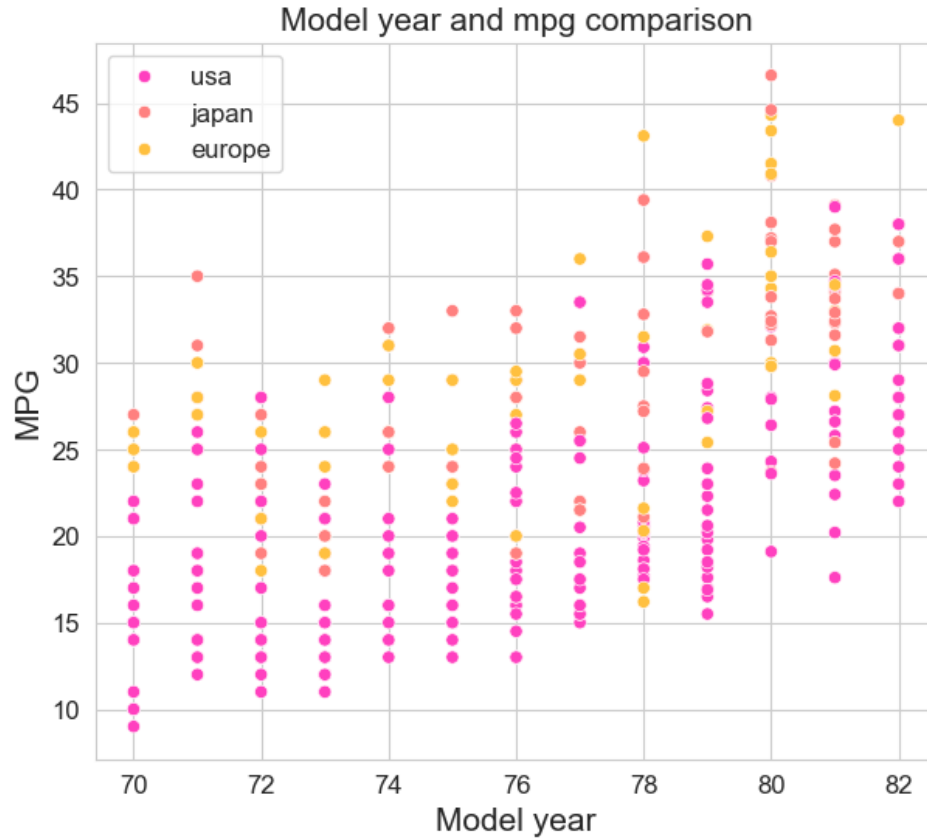
Scatter plot



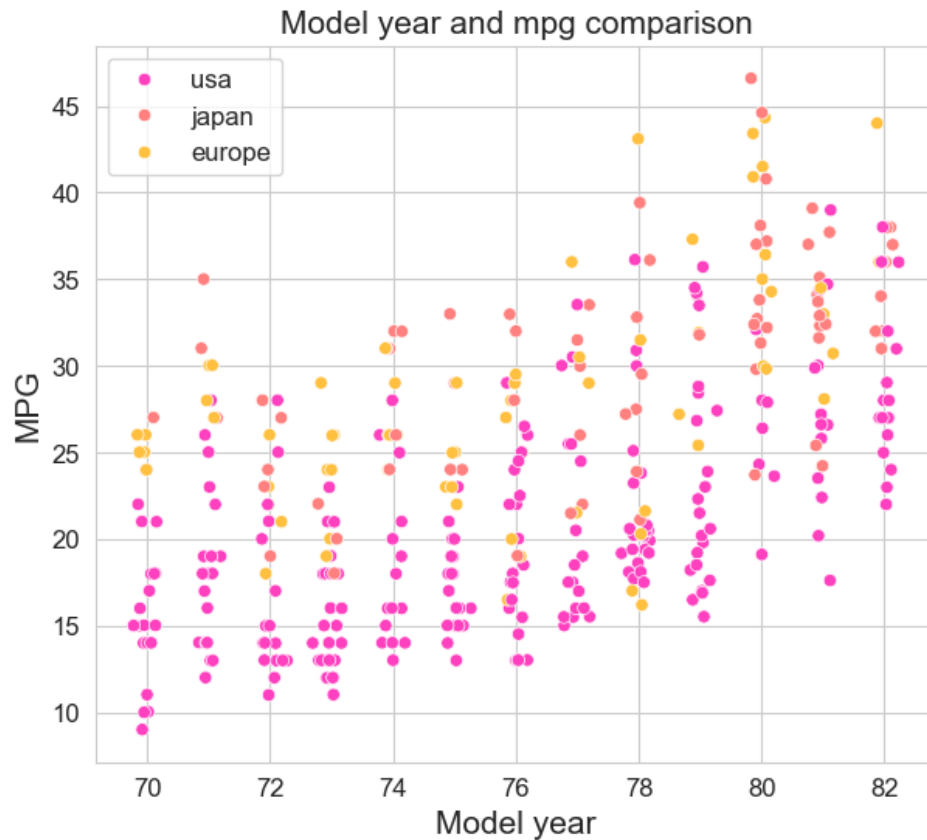
Bubble plot



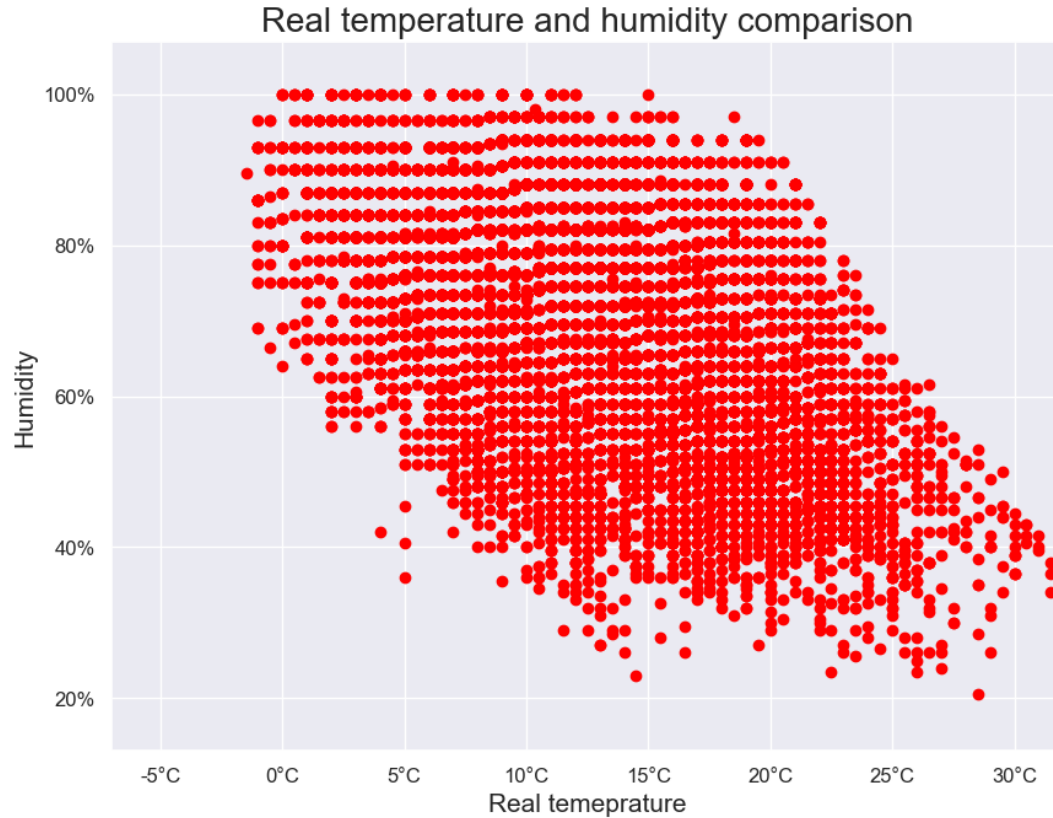
Jittering



Jittering

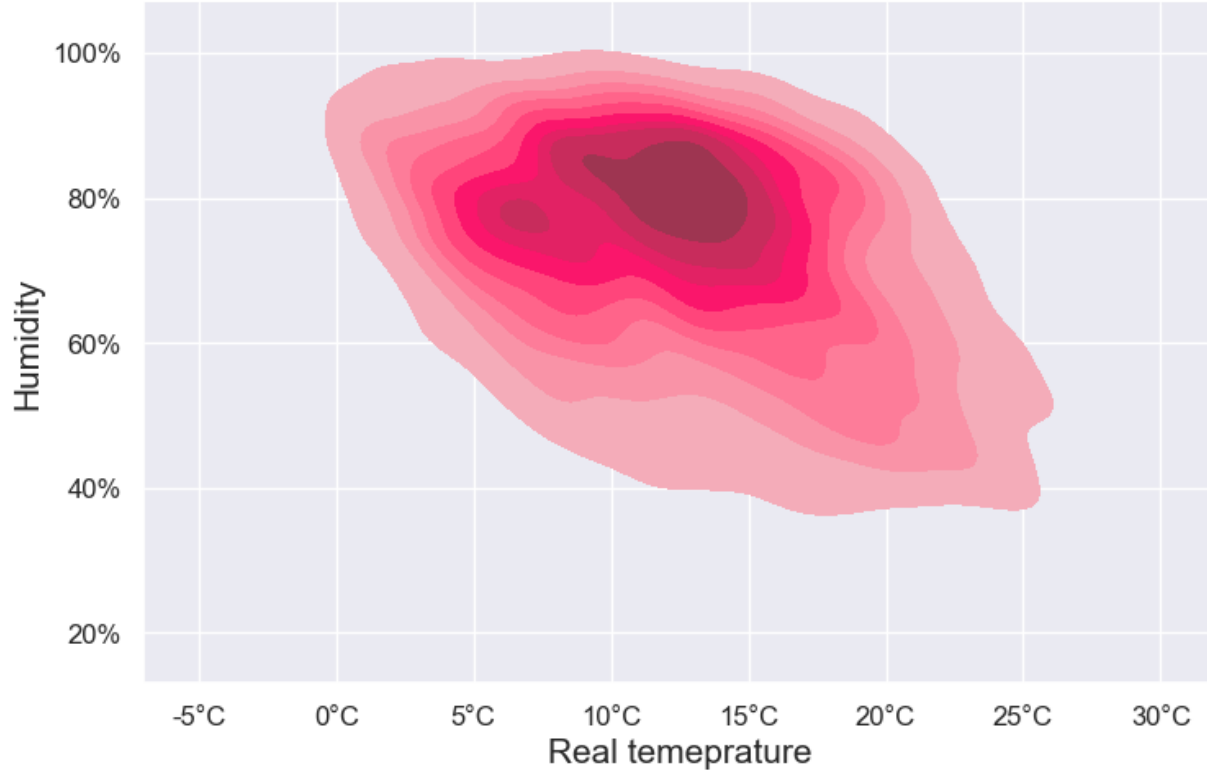


Overlapping points

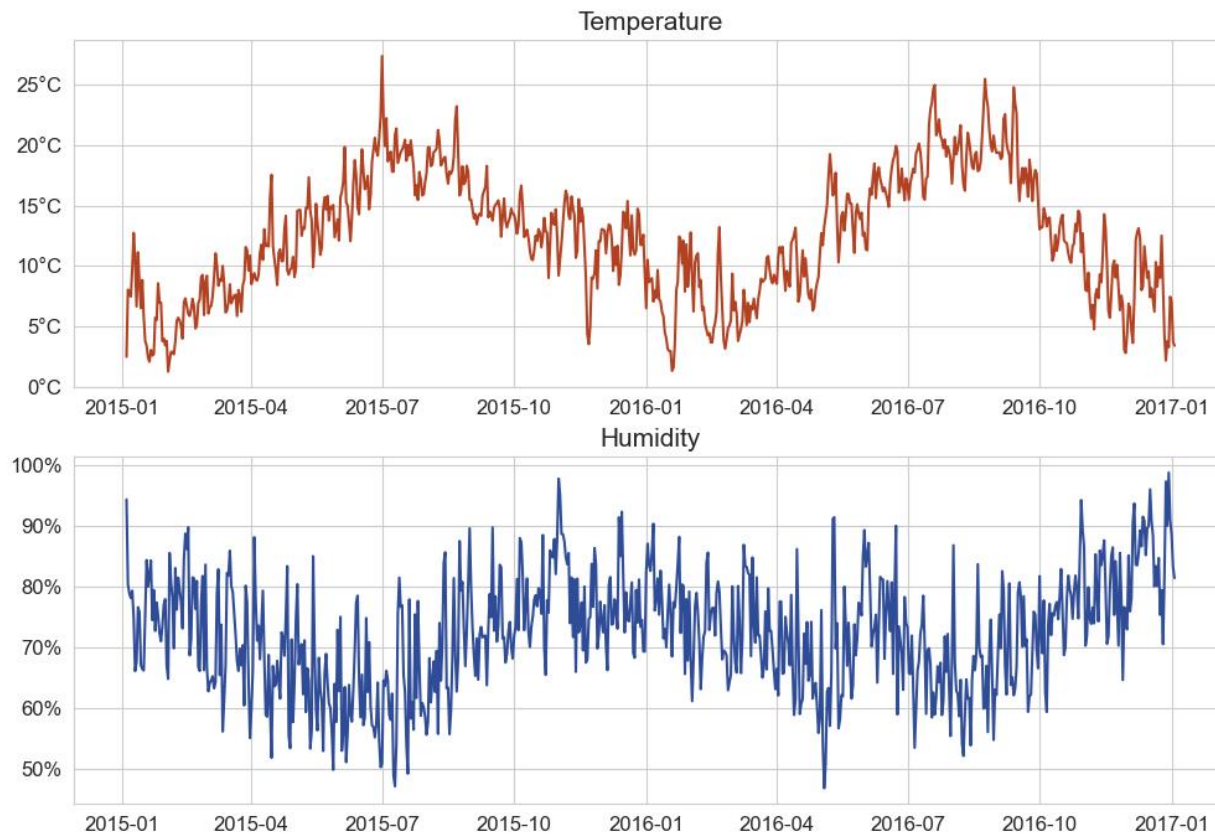


2D density graph

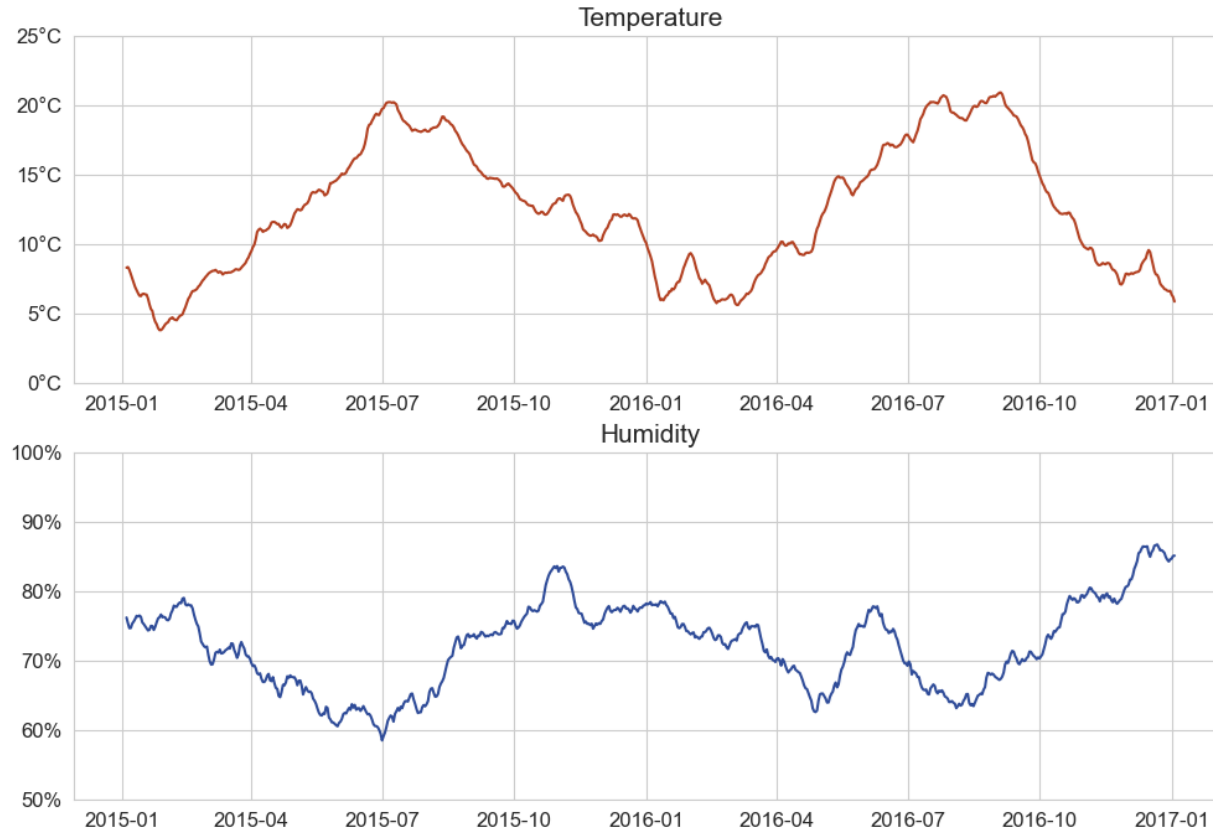
Real temperature and humidity comparison



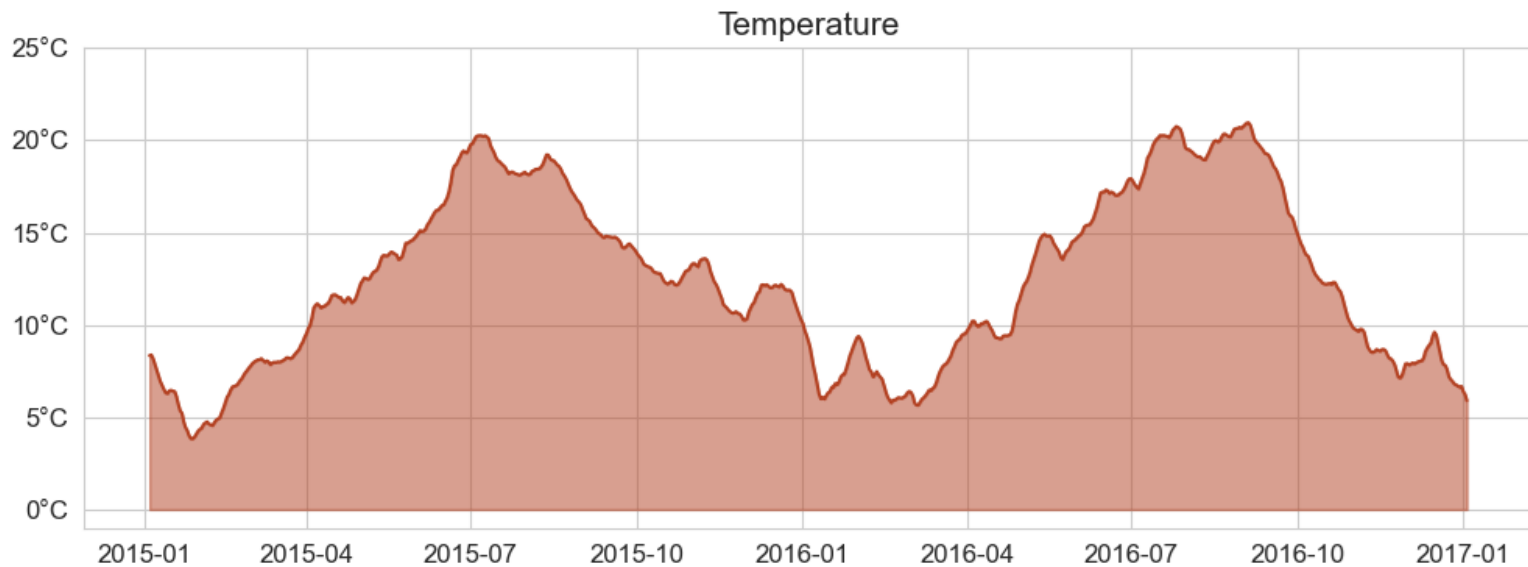
Line graph



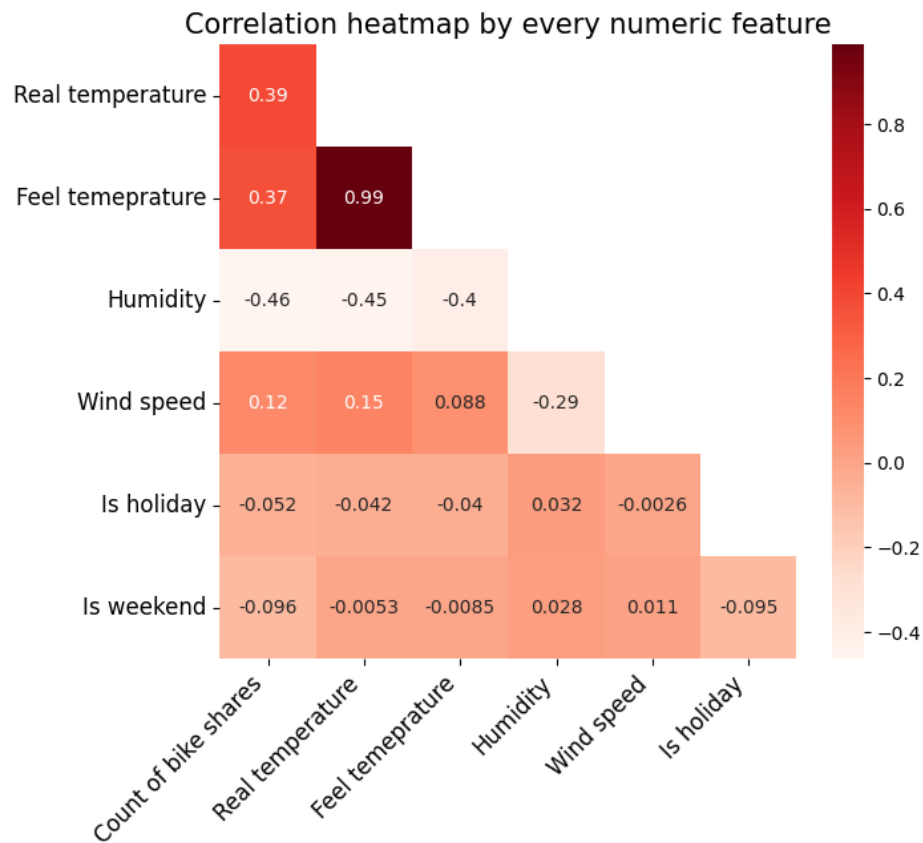
Line graph of data trend



Area plot



Heatmap for correlation



Dimensionality reduction

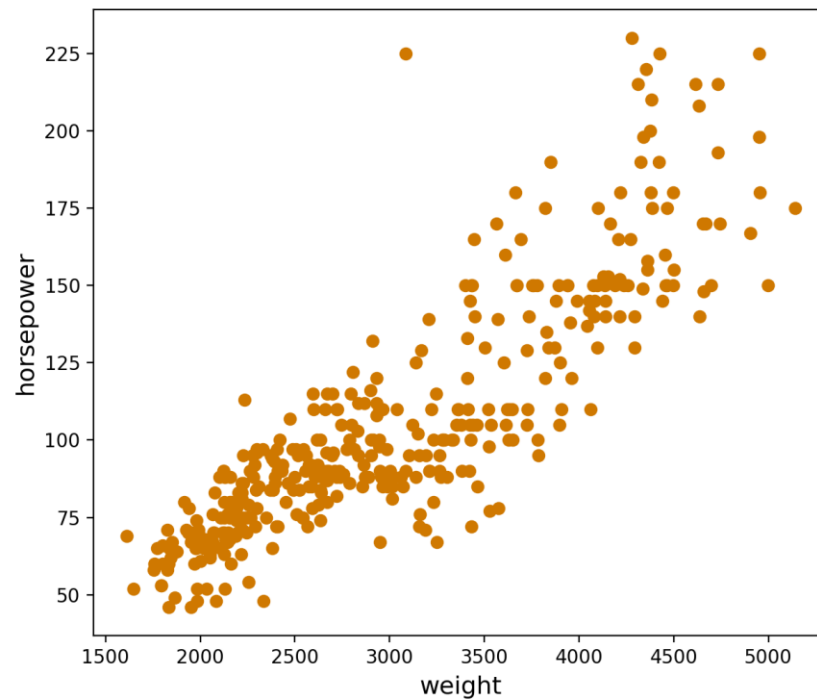
How many features We
can fit on one graph



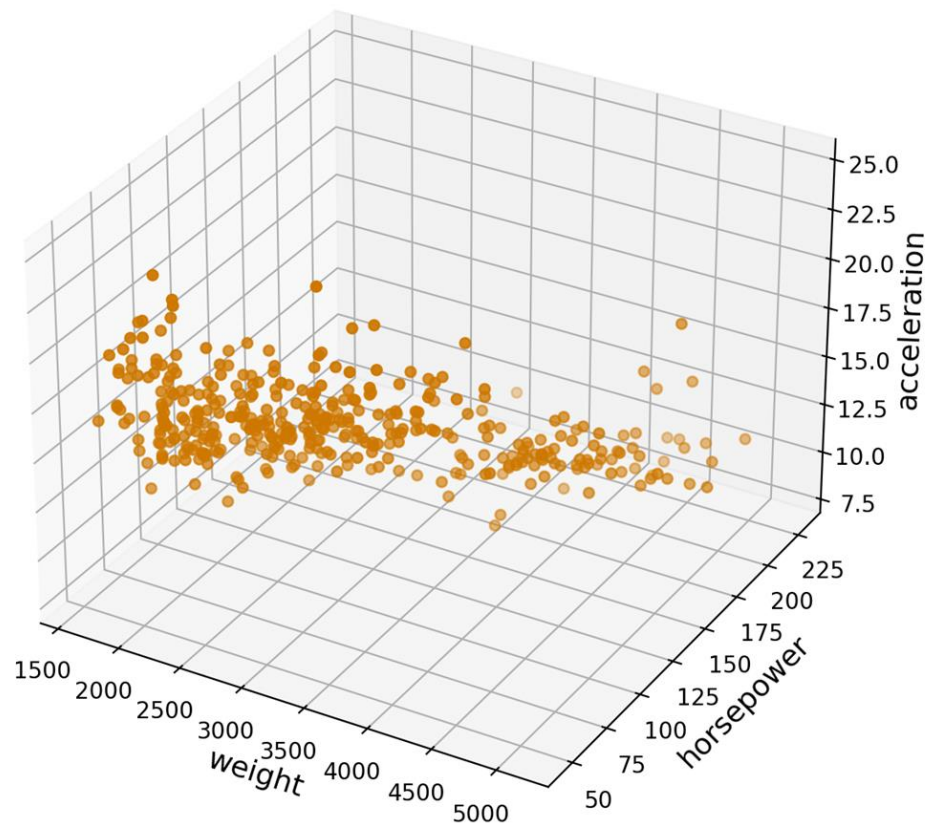
Dimensionality reduction

	cylinders	displacement	horsepower	weight	acceleration	model_year
0	8	307.0	130.0	3504	12.0	70
1	8	350.0	165.0	3693	11.5	70
2	8	318.0	150.0	3436	11.0	70
3	8	304.0	150.0	3433	12.0	70
4	8	302.0	140.0	3449	10.5	70

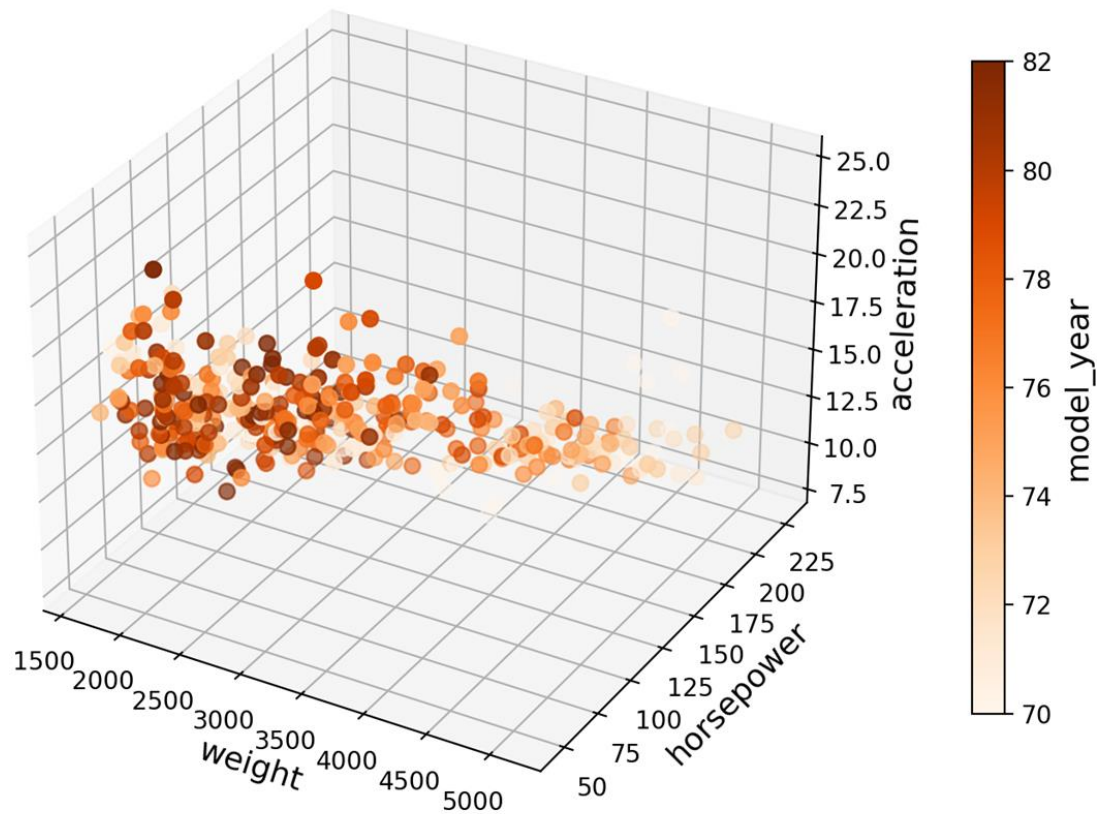
Dimensionality reduction



Dimensionality reduction

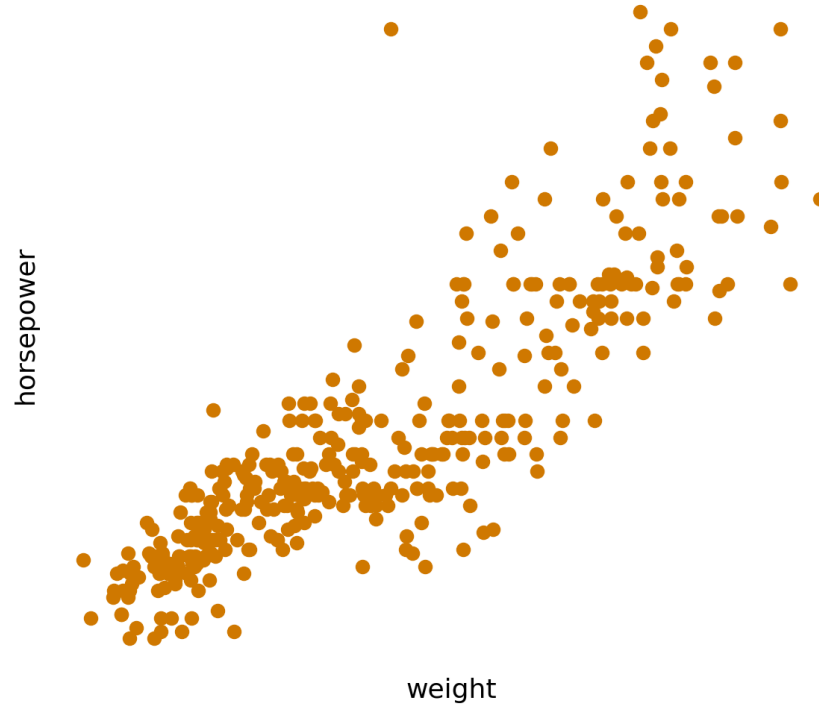


Dimensionality reduction

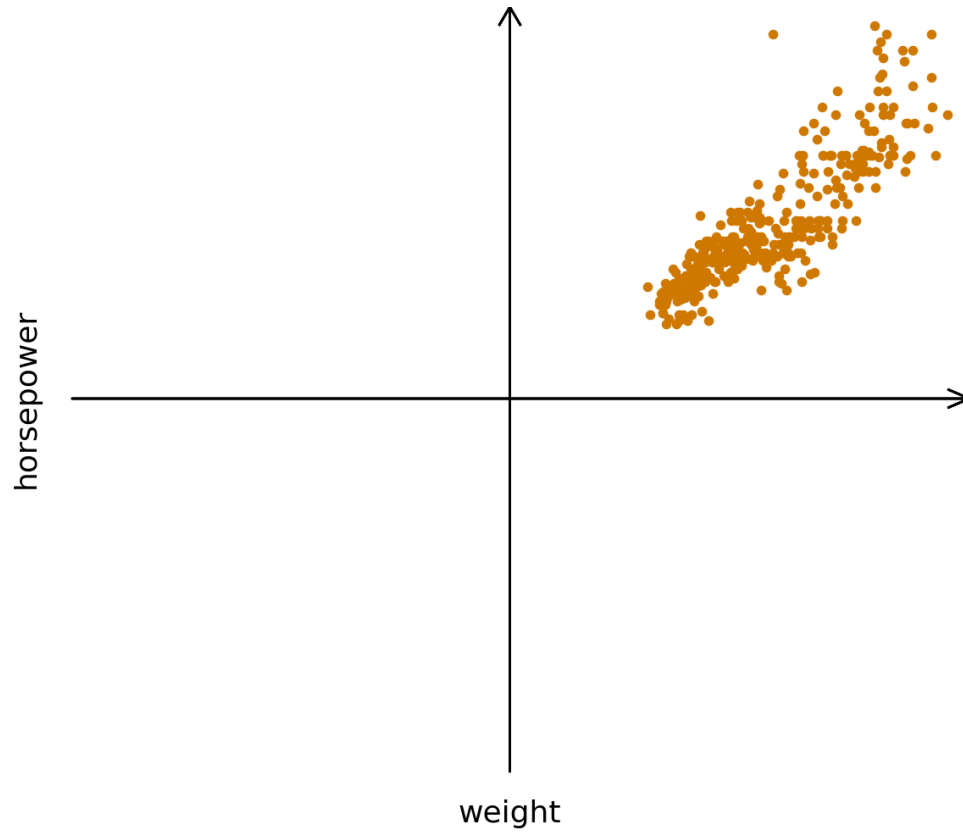


Principal component analysis

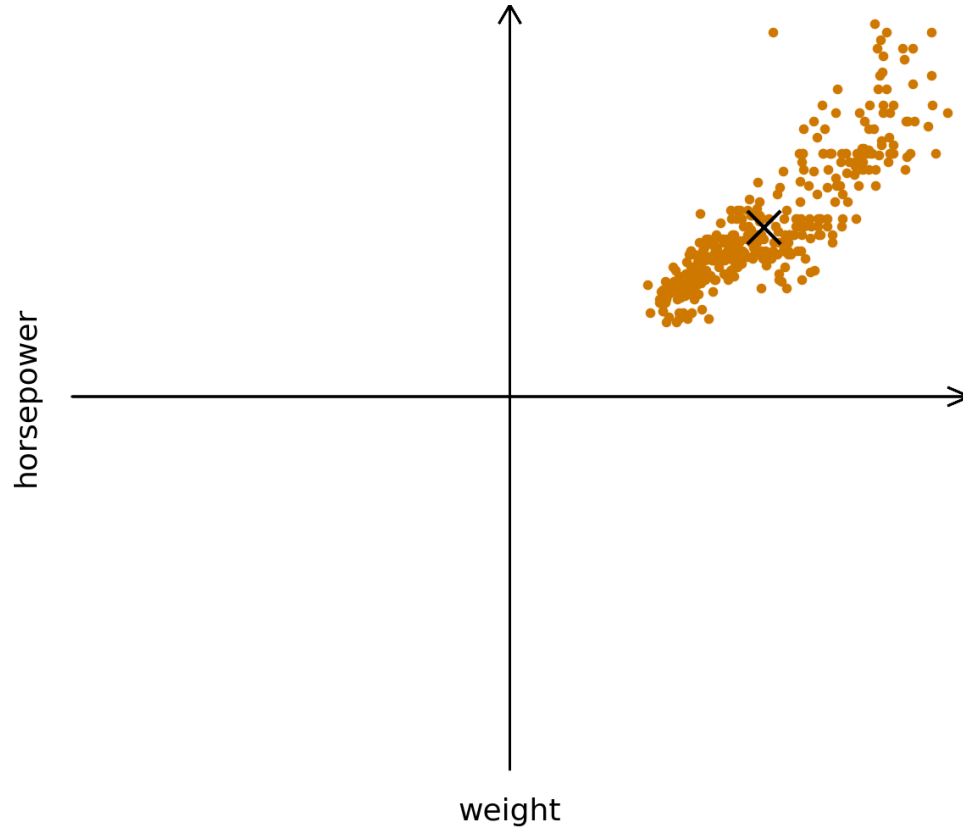
PCA



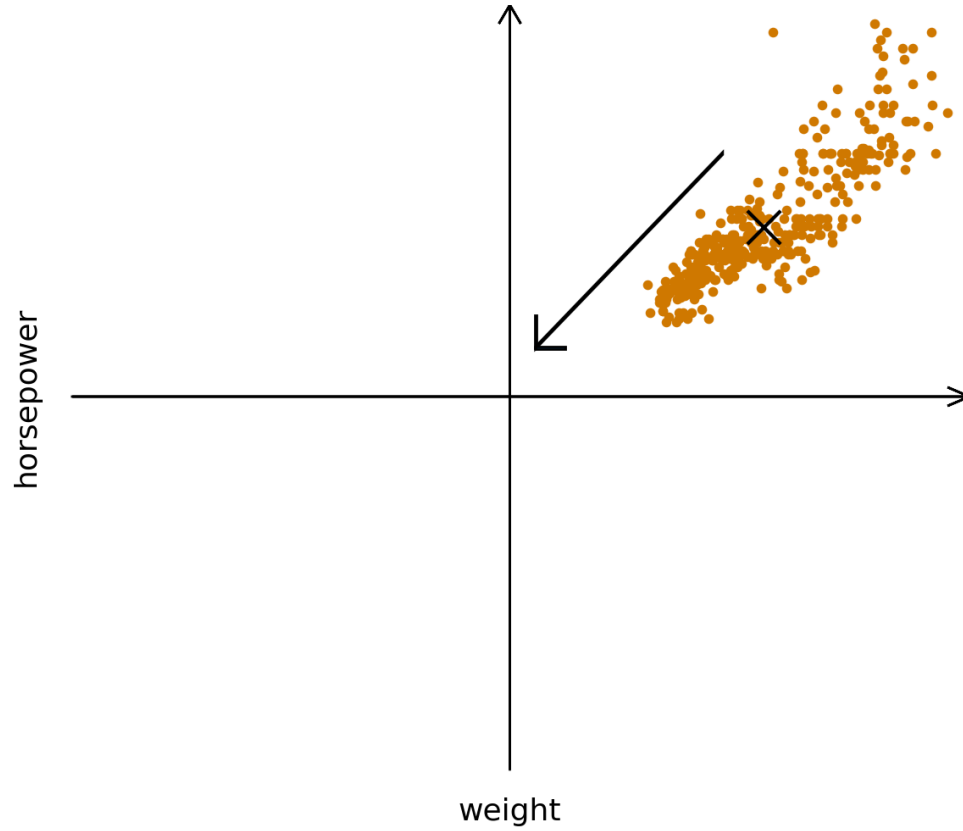
PCA



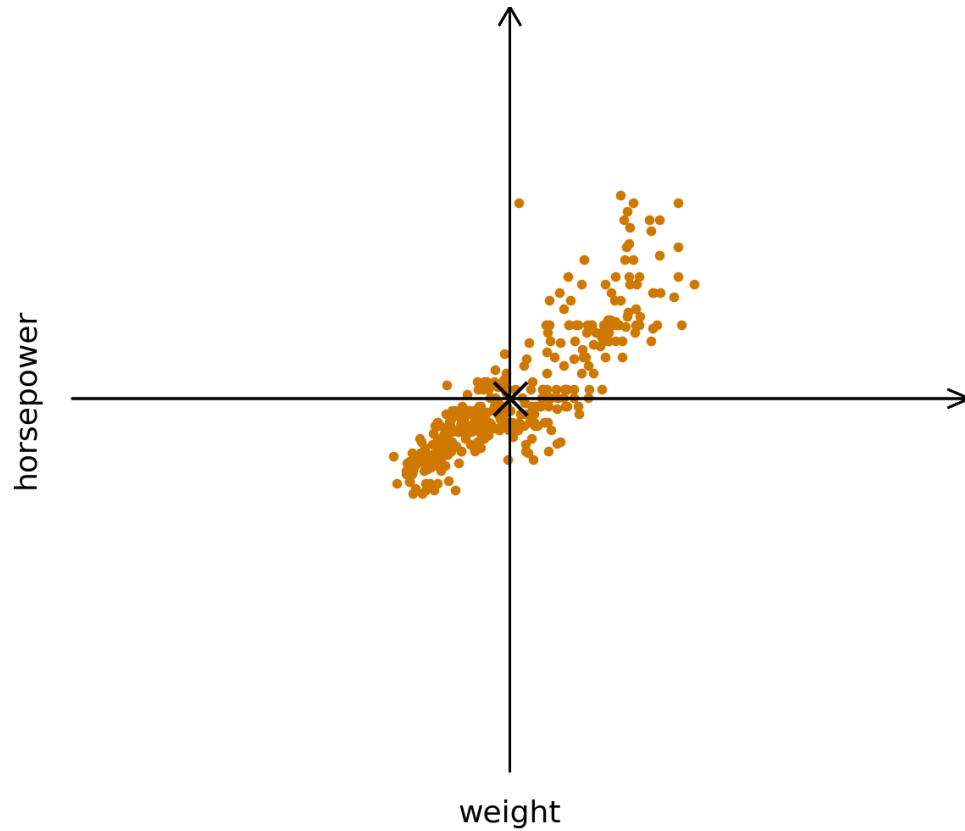
PCA



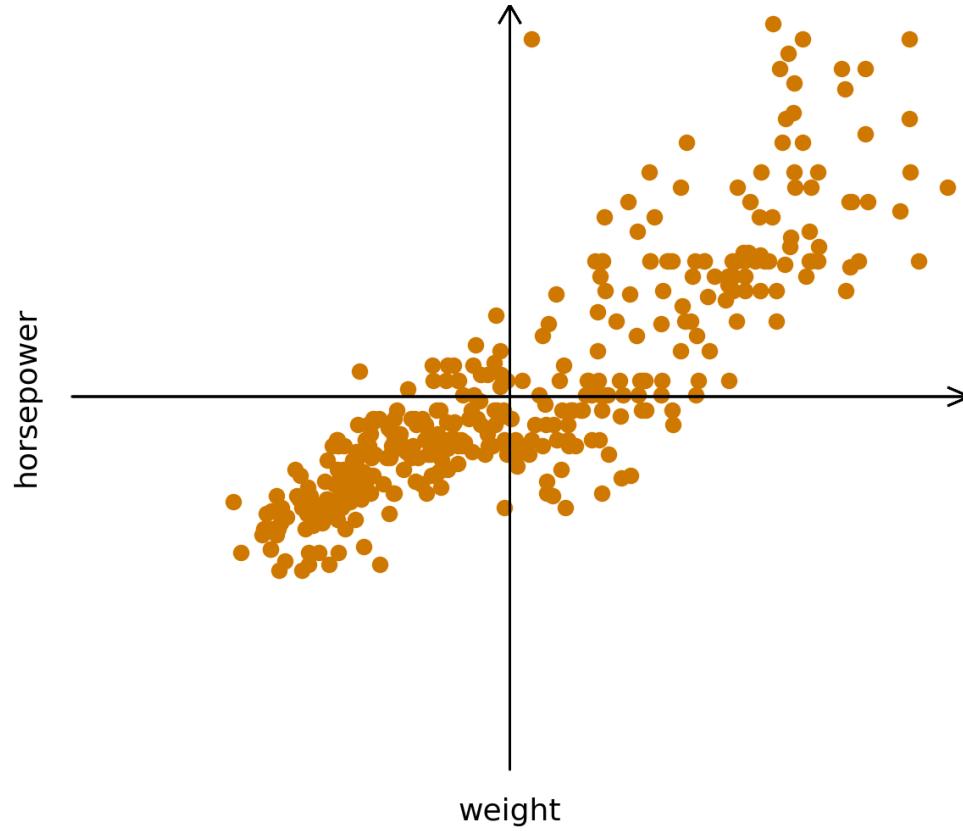
PCA



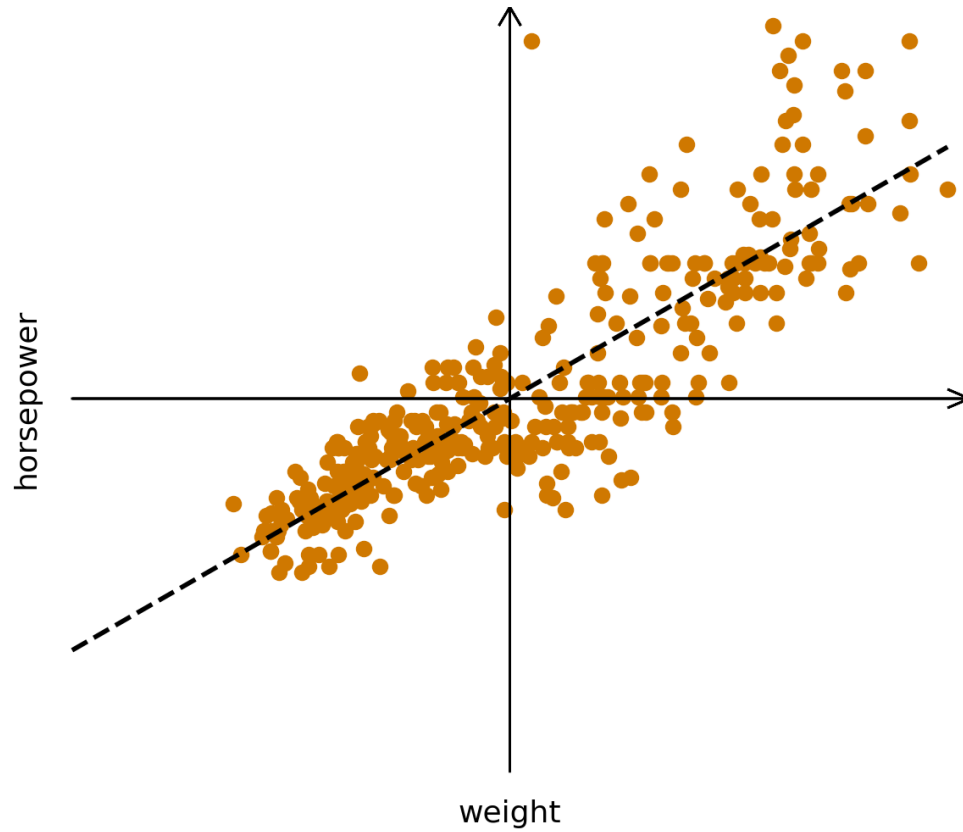
PCA



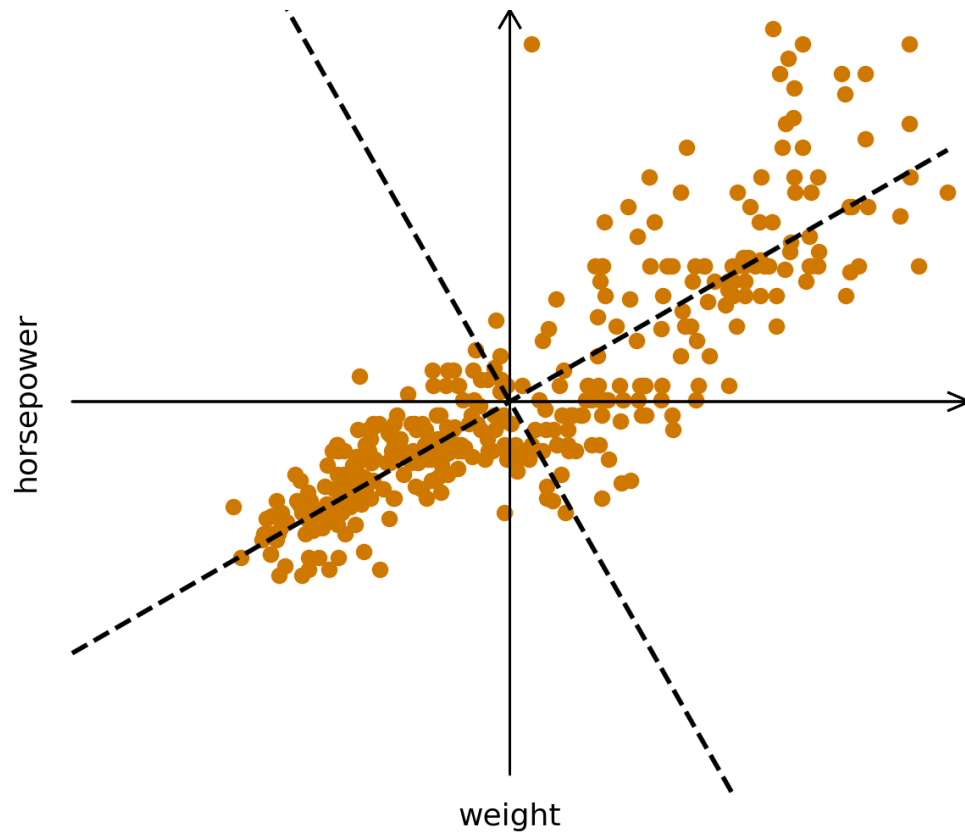
PCA



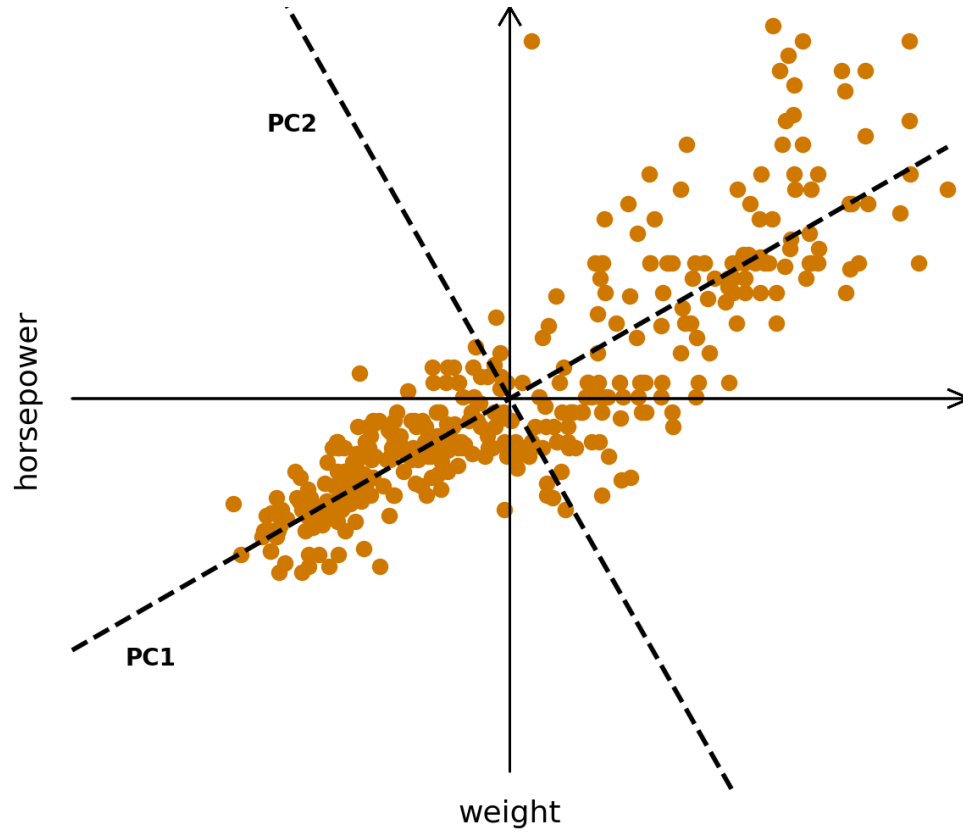
PCA



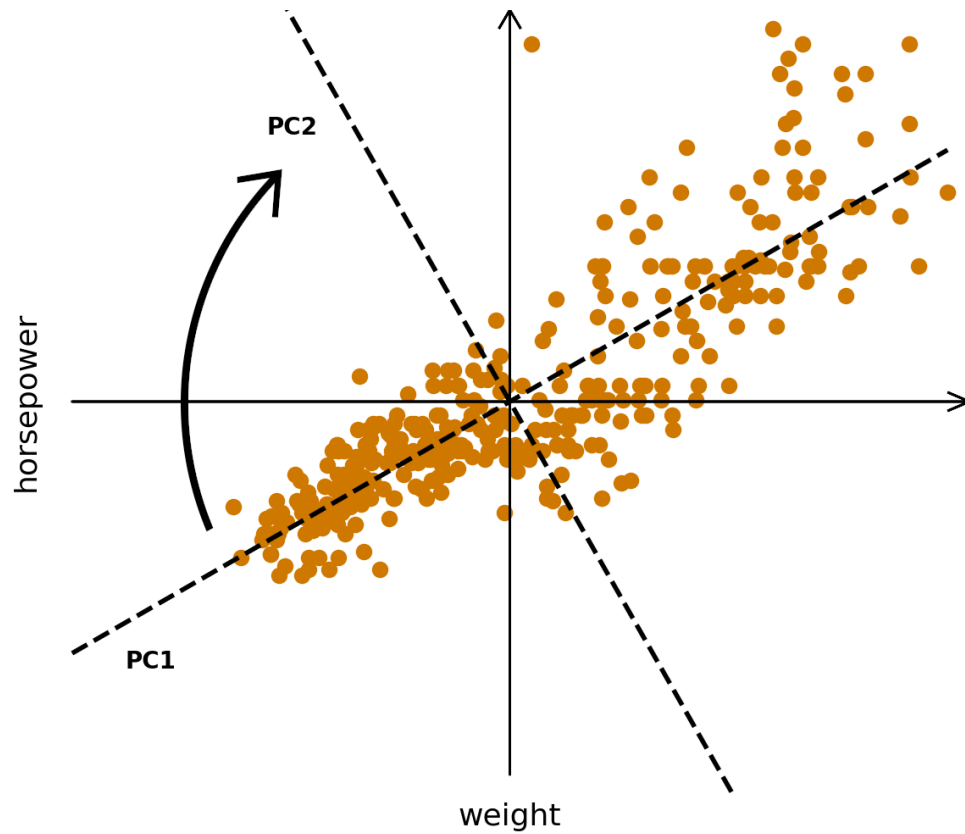
PCA



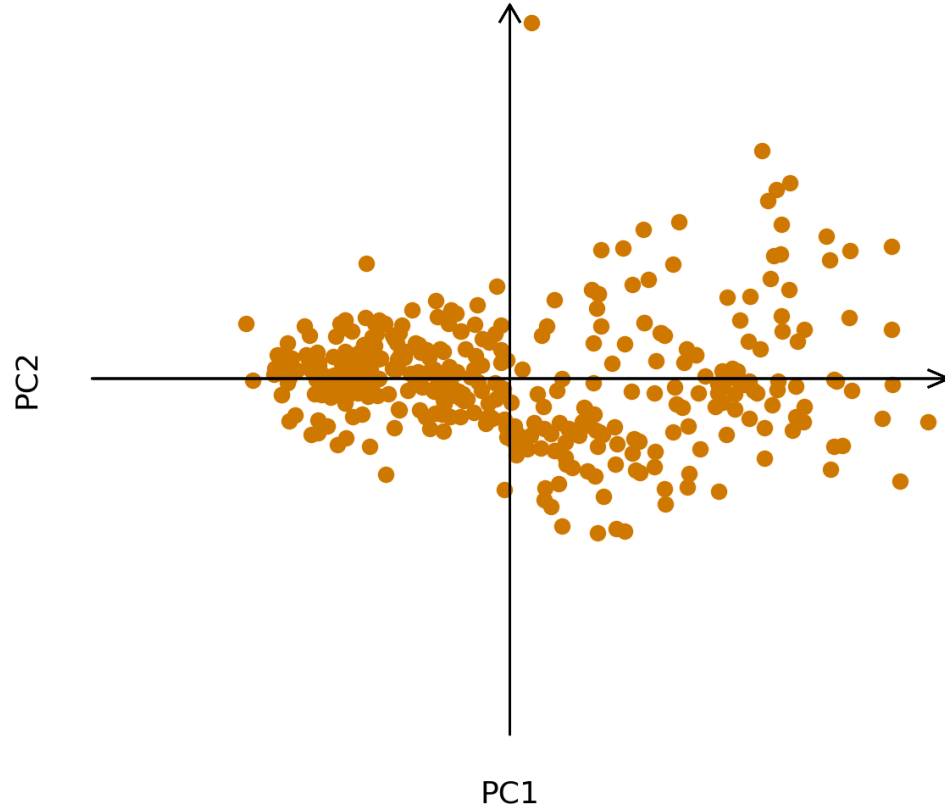
PCA



PCA



PCA



References

Information sources:

- [1] Wes McKinney, [Python for Data Analysis, 3E](#) (2022), Wes's Blog
- [2] Claus O. Wilke, [Fundamentals of Data Visualization](#) (2019), Claus Website

Data sources:

- [3] Sri Harsha Eedala, [Electricity Generated in US by Sector](#) (2023), Kaggle
- [4] Hristo Mavrodiev, [London bike sharing dataset](#) (2019), Kaggle

Other:

- [5] [My private notes about data visualization an examples](#)