

Mini Project 5: World Democracy and Freedom

Learning Objective

Gaining experience in data preparation, unsupervised machine learning analysis, and visualisation of clusters.

Project Objective

For the last 50 years the organisation Freedom House (<https://freedomhouse.org>) monitors and protects the democracy values, political rights and civil liberties in the world.

We would like to get insights about the status of freedom of all countries in 2023.

Tasks

1. Research the work of Freedom House and choose some of their data collections, relevant to the objective.
2. Clean and explore the data and prepare it for clustering
3. Choose an unsupervised ML algorithm and apply it to create clusters of countries, based on their freedom assessment measure.
4. Create a geographical map of the world and colours the countries on it to reflect on their freedom status (cluster).

Use Folium (<https://python-visualization.github.io/folium/latest/>) as a geo-mapping and visualization tool.

5. Answer the following questions:
 - Did you learn anything new about the human's freedom?
 - How many categories of freedom (clusters) have you defined?
 - Which clustering methods and algorithms have you implemented?
 - What motivates your choice of algorithms?
 - What are the advantages and disadvantages of these methods?
 - Would you be able to re-use the code of your solution for analysis of data collected in previous years? How?

Demonstrate your solution in class and compare your results with the results of the other students/groups.

Notes

This is a group project, brings 20 study points, which include the peer-grading. Parts of it may be re-used in the exam project, if it is relevant.