A decorative background featuring a network diagram with nodes and connecting lines. The nodes are represented by circles of varying sizes and colors (blue, grey, white), and the lines are thin and grey. The network is spread across the top-left and bottom-right corners of the slide.

Research of COVID-19 impact and trend in USA using statistical approach

December 2020



Hello!

I am Artsiom Naslednikau

I am here to give a presentation.

- © <https://orcid.org/0000-0002-7630-1972>
- © https://github.com/nasled/covid_research

Used Methods

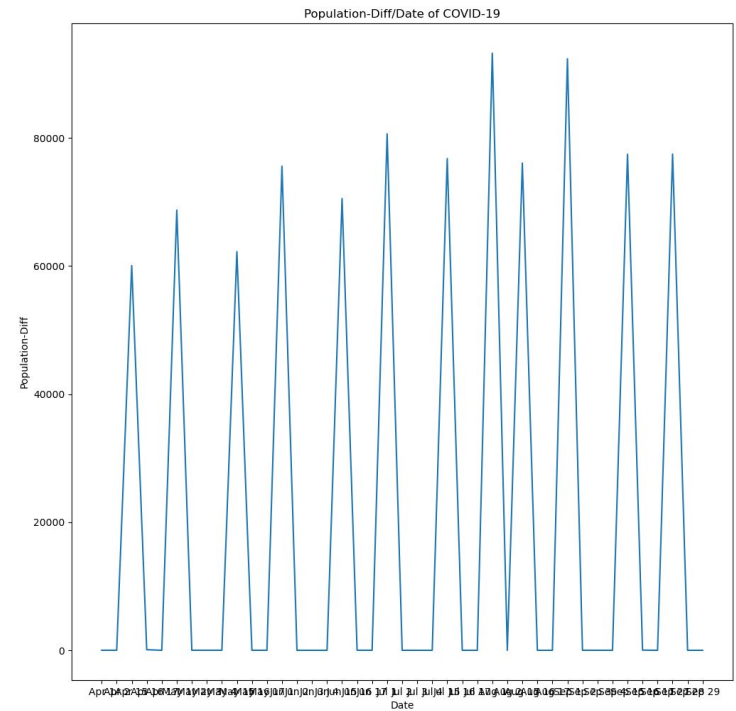
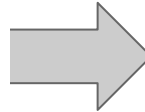
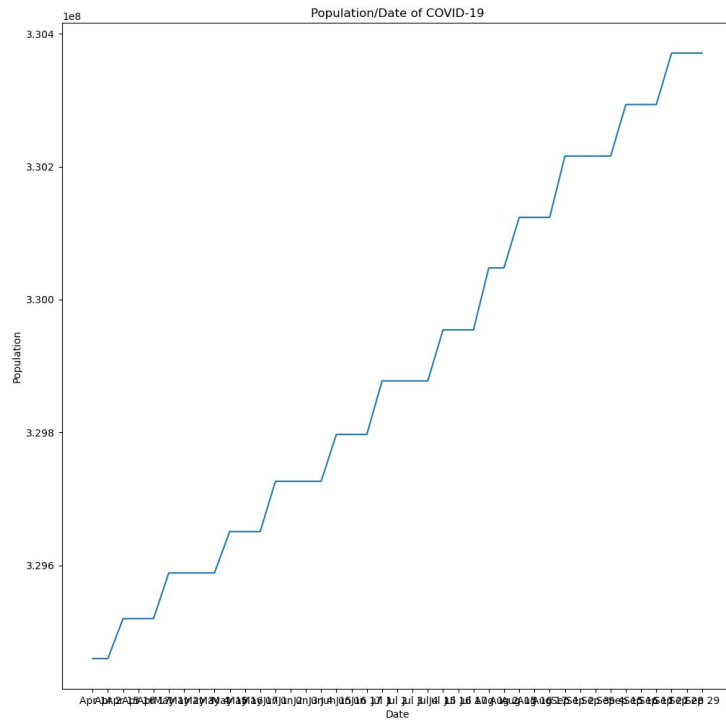
- ◎ Attribute Selection
- ◎ Data Normalization
- ◎ Regression Comparison
- ◎ Feature Classification
- ◎ Clustering

Selected Attributes

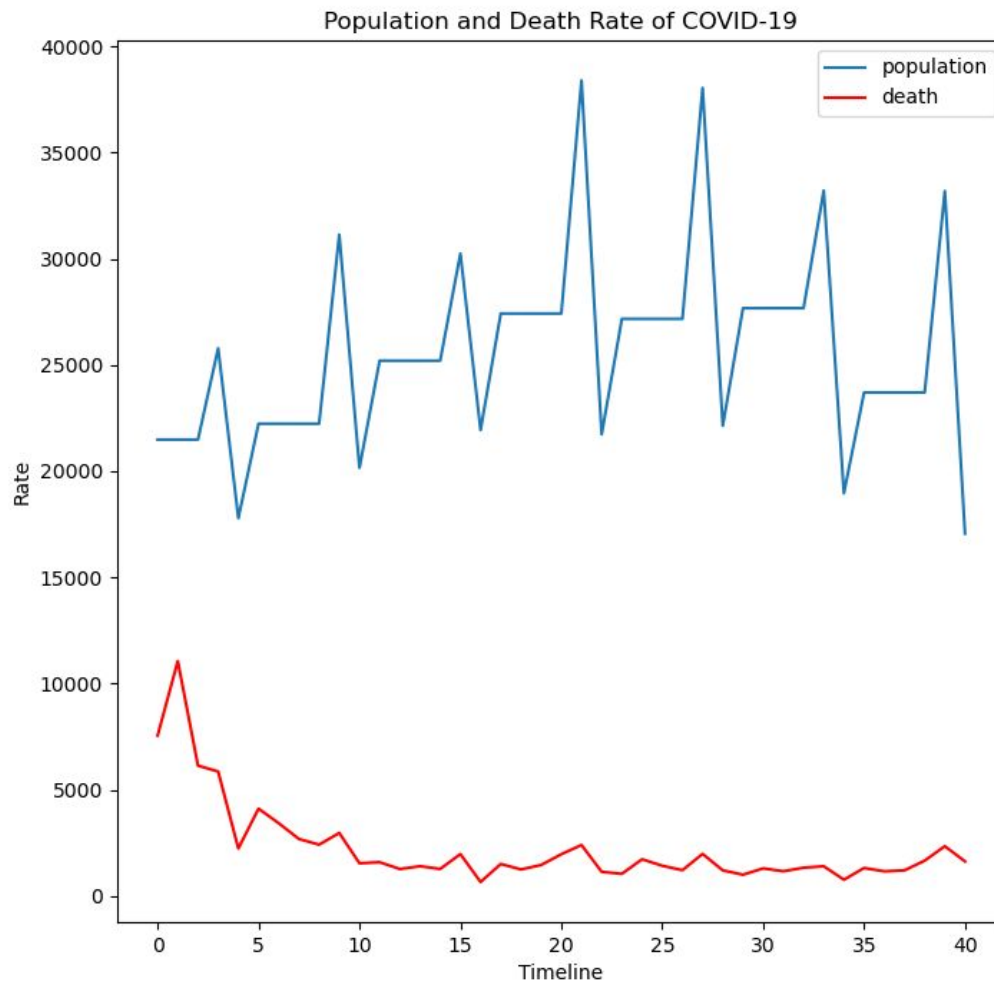
Property	Description	Type
submission_date	Date of counts	Date & Time
conf_cases	Total confirmed cases	Number
conf_death	Total number of confirmed deaths	Number



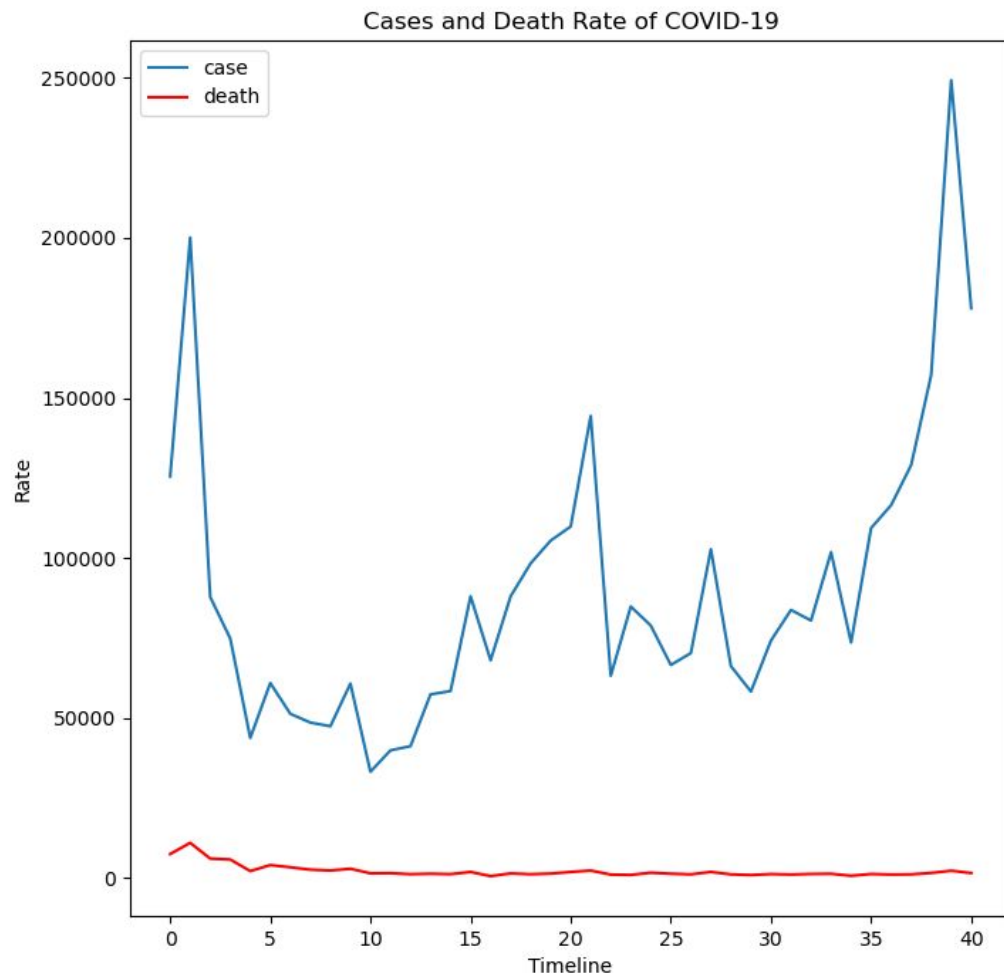
Data Normalization of USA population



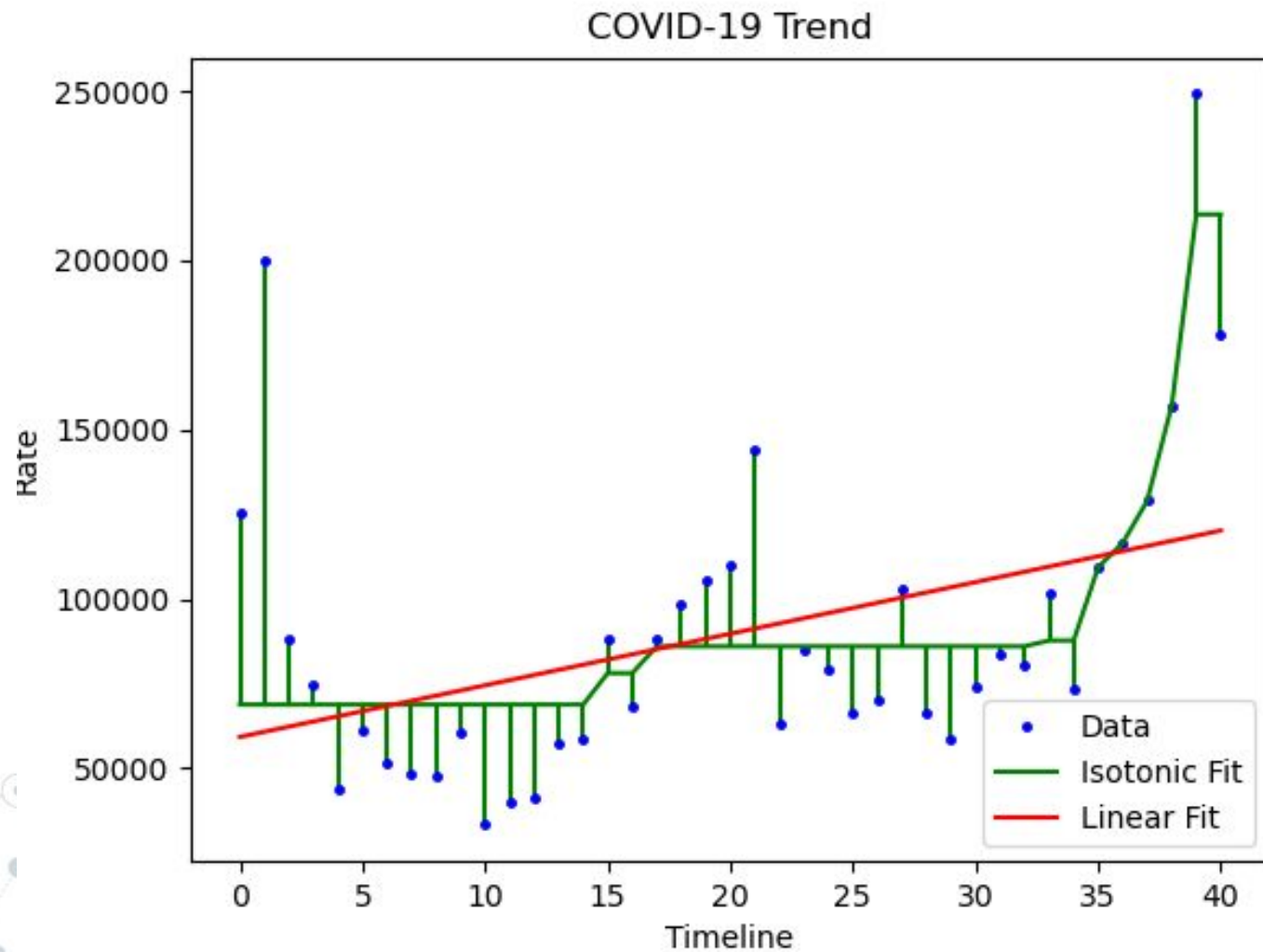
Population and Death Rate Interconnection



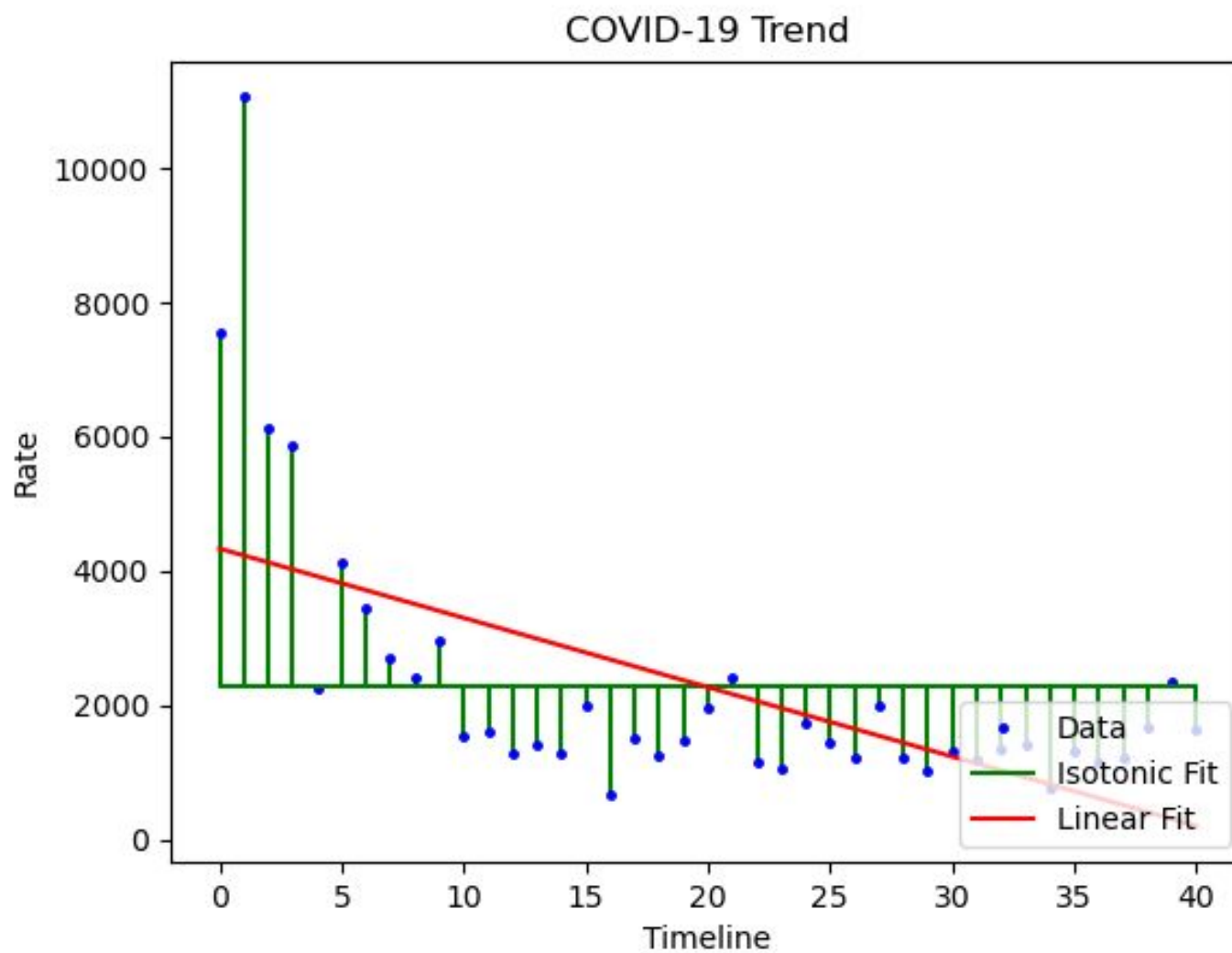
Cases and Death Rate Interconnection



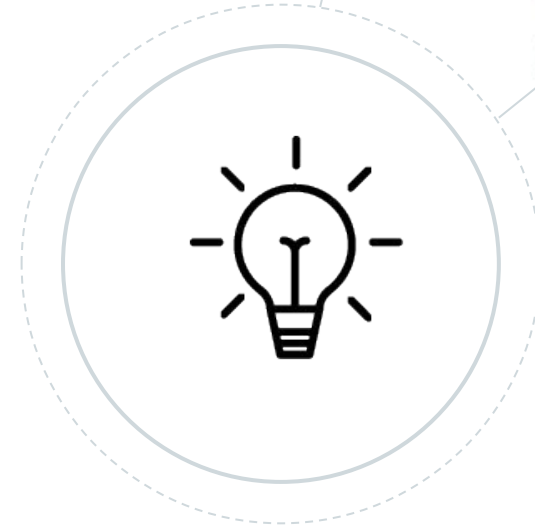
Cases Rate Isotonic Regression



Death Rate Isotonic Regression

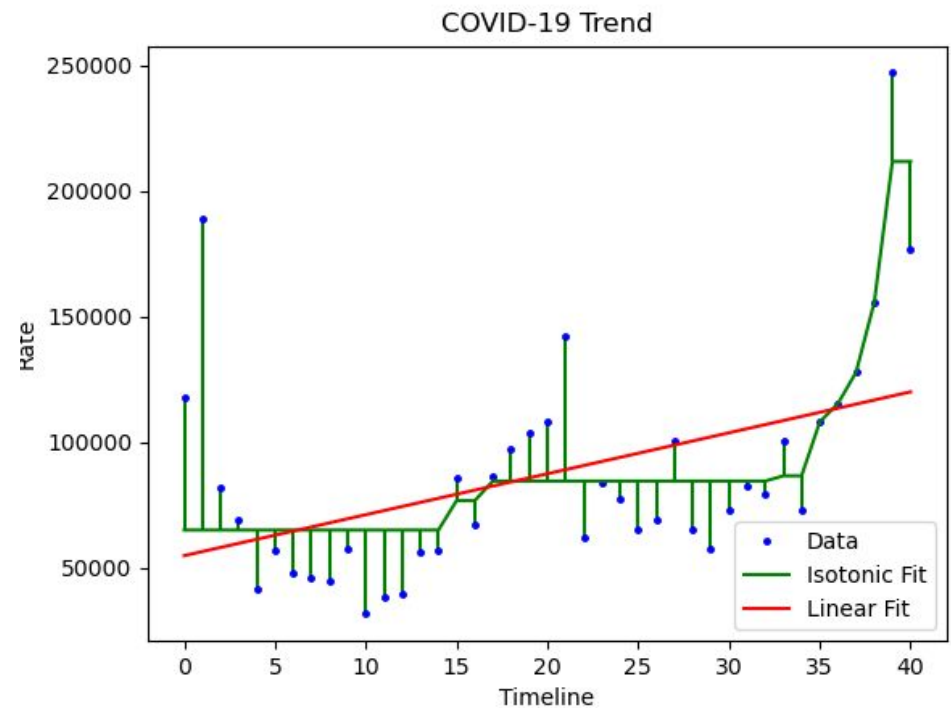
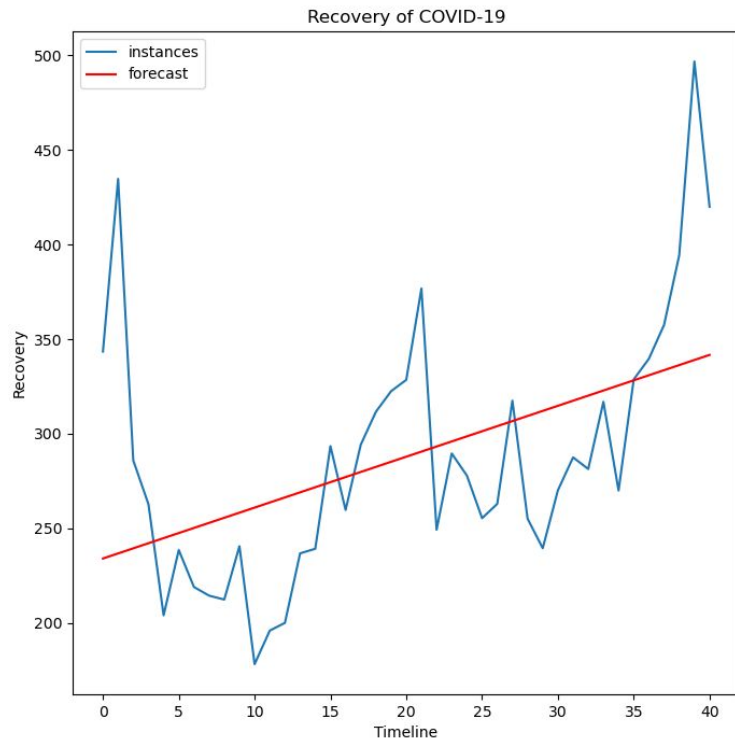


Recovery Formula



Recovery = Case - Death

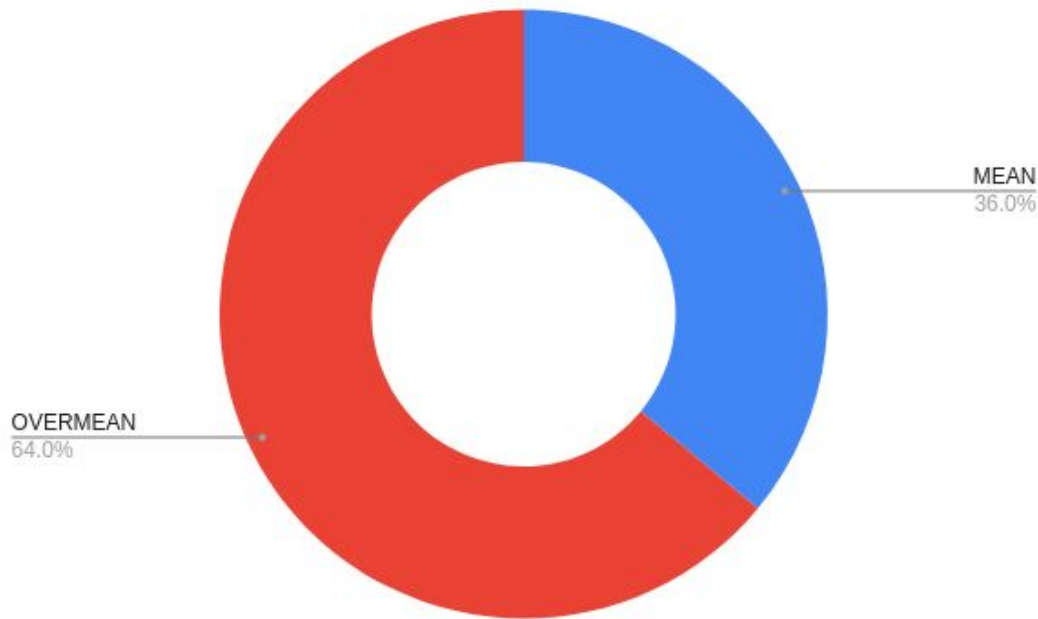
Linear and Isotonic Regressions of Recovery Rate



Recovery Rate Classification by State of COVID-19 in USA

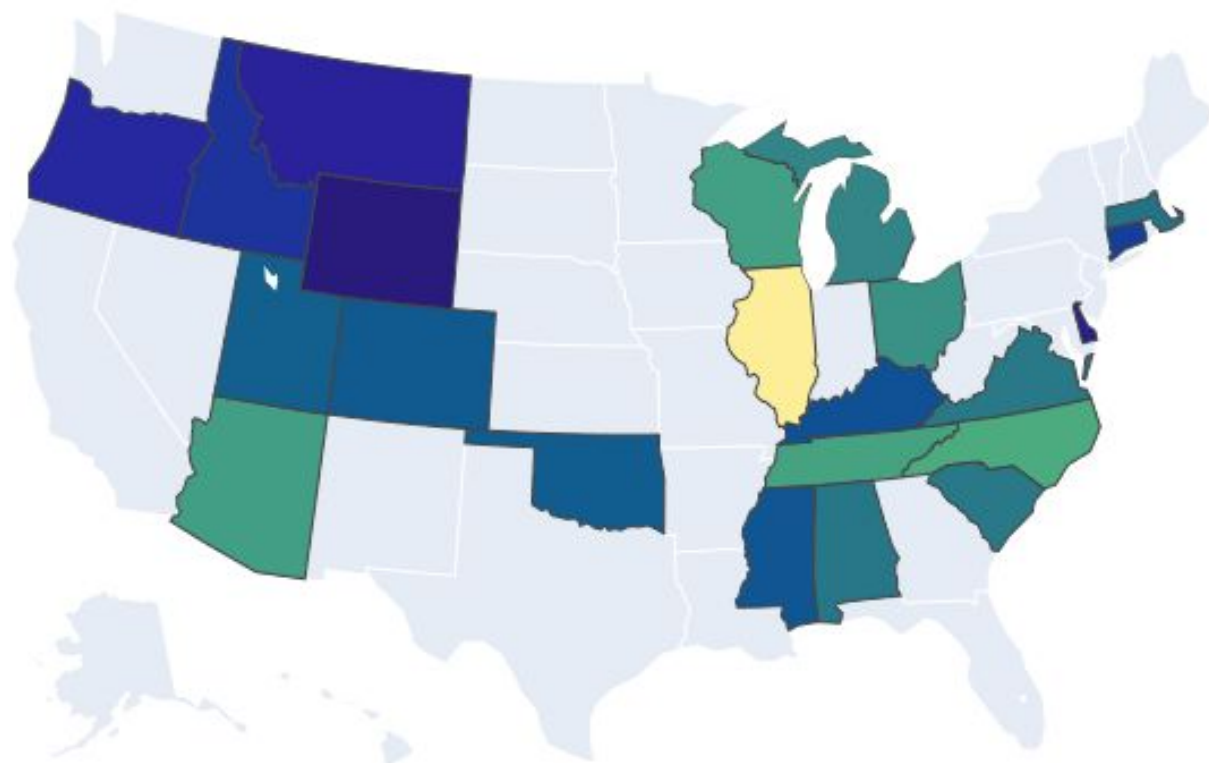
25 states in total.

16 states bellow mean and **9** states over mean.



<u>MEAN</u>	<u>OVERMEAN</u>
WY	NC
ID	NY
CO	OH
CT	AZ
MA	TN
AL	MI
VA	WI
MS	IL
OR	GA
MT	
SC	
KY	
PR	
OK	
UT	
DE	

Cases Rate by State of COVID-19 in USA



Rate

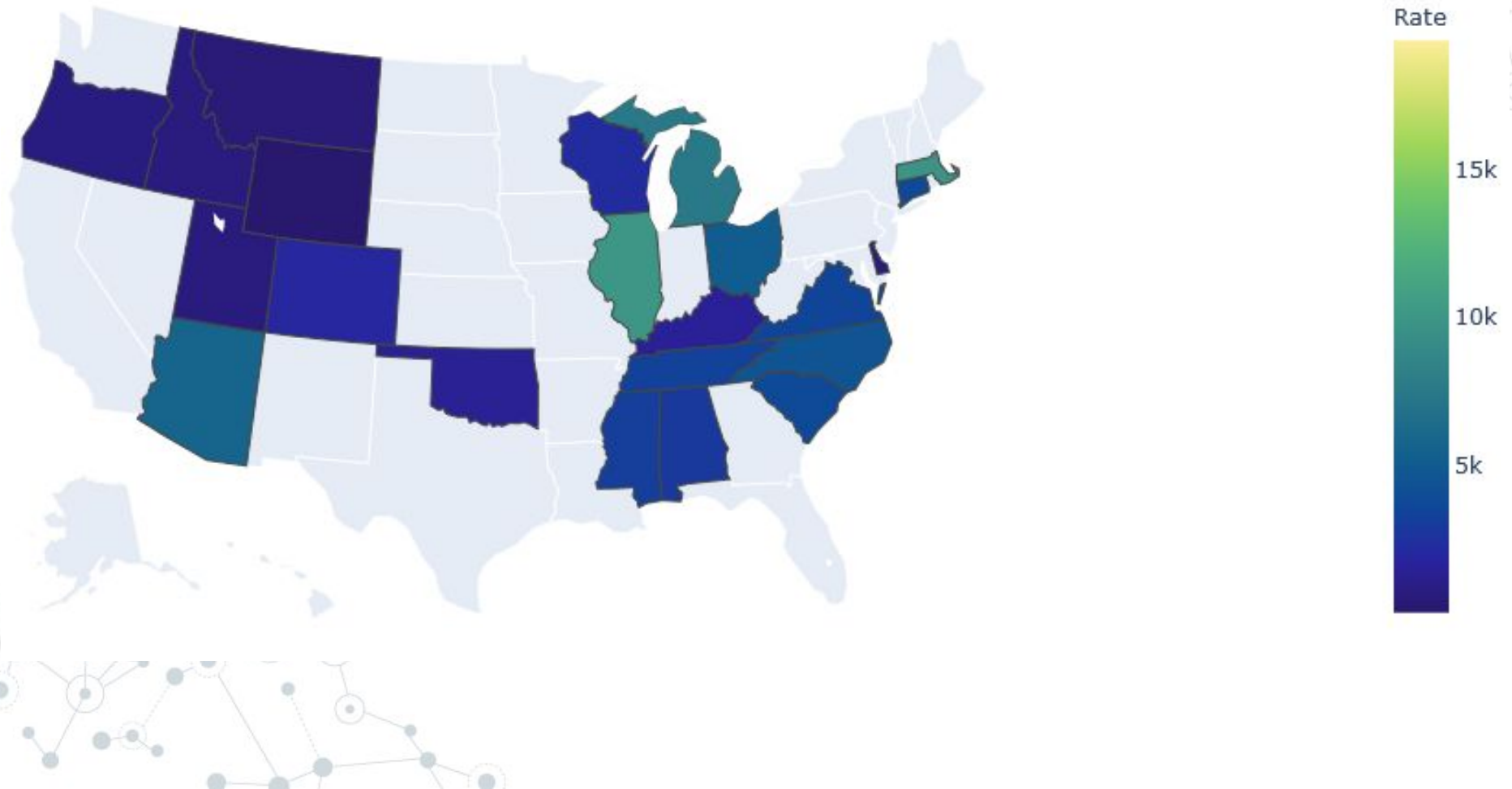
400k

300k

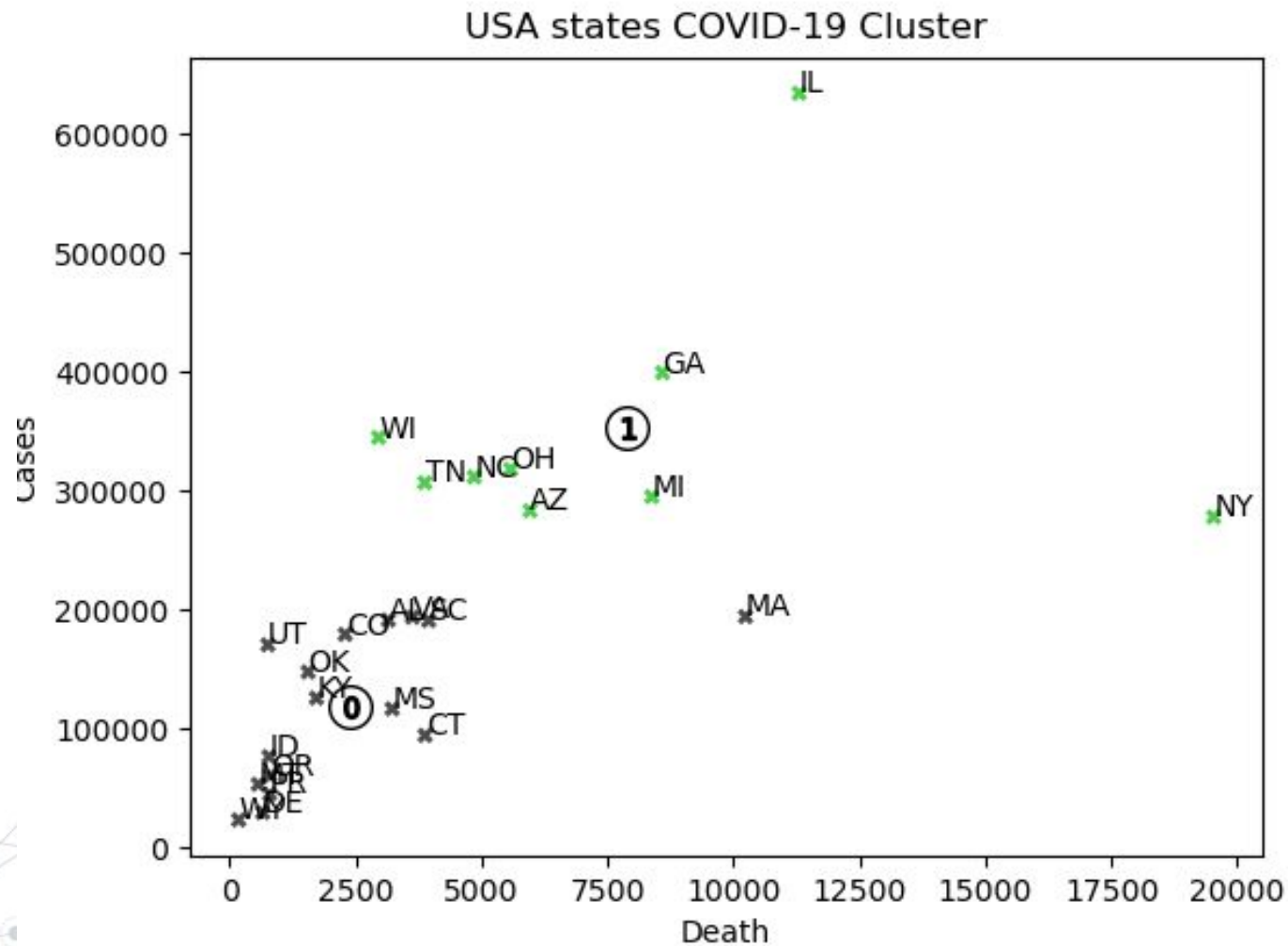
200k

100k

Death Rate by State of COVID-19 in USA



Clustering by State of COVID-19 in USA



Python Libs Used



- ◎ Statistics
- ◎ Scipy
- ◎ Numpy
- ◎ Math
- ◎ Matplotlib
- ◎ Plotly
- ◎ Pandas

A decorative network diagram in the top right corner, featuring a complex web of interconnected nodes and lines. The nodes are represented by circles of varying sizes, some with concentric circles, and the lines are thin and grey, creating a mesh-like structure.

Thanks!

Any questions?

A decorative network diagram in the bottom left corner, similar to the one in the top right, showing a cluster of nodes and connecting lines in a light grey color.