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AKN WATER

FOR WATER QUALITY

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INTRODCATION

AKN is a material testing laboratory that focuses on water quality tests and classification. Our next step, to expand the business research and development that to start a project to automate the water classification process.

Safe drinking water is a basic human right and a component of a good health-protection strategy. On a national, regional, and local level, this is a major health and development concern. Investments in water supply and sanitation have been demonstrated to provide a net economic benefit in some locations since the reductions in negative health consequences and health expenses surpass the price of implementing the interventions.

In this project, AKN used historical samples from different resources and restricted standers for water quality based on the chemical, physical, and biological specifications of the sample that were specified as drinkable or not drinkable.

QUESTIONS

Classifying water is critical task to do, if want machine to do this job we must ask important questions

·What are the chemical, physical, standards that affect specification?
·Does the model perform well on other samples?
·Is the weight of wrongly classifying sample to potable equal to wrongly classifying to not potable, if not how to find a good measure for the relation?
·What is the best measure to test the model?
·What is the range for acceptable error?

SCOPE

To classify water potability the following information from previous samples were used
1-Chemical properties (pH, Hardness, Total solids, chloramines, sulfate , conductivity,Trihalomethanes , Organic carbon)
2-Physical: Turbidity.

OBJECTIVE

1- Specified the water is drinkable or not drinkable.
2- Web app which evaluates if water is safe for human consumption.

TOOLS

Data manipulation: NumPy and Pandas
Modeling: Sklearn
Visualization: matlibplot and seaborn
Others:
NullFormatter, Plotly, Missingno, Filterwarnings, Counter. Orange Dash, R Shiny.