

Machine Learning Model for Water Quality Prediction using Python and AI framework

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Abstract: During the last years, water quality has been threatened due to unprocessed effluents, municipal refuse, factory wastes, junking of compostable and non-compostable effluents has hugely contaminated nature-provided water bodies like rivers, lakes and ponds are pollutants. Therefore, it is necessity to look into the water standards before the usage. Hence modeling and predicting water quality have become very important in controlling water pollution. Safe drinking-water access is essential to health, a basic human right and a component of effective policy for health protection. It is important as a health and development issue at a national, regional and local level. Thus it is a problem that can greatly benefit from Artificial Intelligence (AI). Traditional methods require human inspection and is time consuming. Automatic Machine Learning (AutoML) facilities provide machine learning with push of a button, or, on a minimum level, ensure to retain algorithm execution, data pipelines, and code, generally, are kept from sight and are anticipated to be the stepping stone for normalizing AI. However, it is a field under research still. This project work aims to recognize the areas where an AutoML system falls short or outperforms a traditional expert system built by data scientists. Keeping this as the motive, this project work dives into the Machine Learning (ML) algorithms for comparing AutoML and an expert architecture built by this project for Water Quality Assessment to evaluate the Water Quality Index, which gives the general water quality, and the Water Quality Class, a term classified on the basis of the Water Quality Index using python. In this Project, we are going to implement a water quality prediction using machine learning techniques. In this project, our model predicts, that the water is safe to drink or not, using some parameters like PH value, conductivity, hardness, etc. Finally the results of accuracy level of AutoML and Python compared with conventional ML techniques.

Keywords: Machine Learning, Classification Algorithm, Prediction, PyThon and AI framework

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