

EFFICIENT WATER QUALITY ANALYSIS AND PREDICTION USING MACHINE LEARNING

S.No	TITLE	AUTHOR	DESCRIPTION	HIGHLIGHTS	DRAWBACKS
1.	Internet of Things for Water Quality Monitoring and Assessment. Published: September 2020, Google Scholar.	Joshua O. Ighalo, Adewale George Adeniyi, and Goncalo Marques.	To address the challenge of contamination of water, the integration of monitoring and mitigation is considered and IoT is used as a platform.	Advantages of IoT in this field are the ability to collect data in real time and to obtain the availability and status of monitored data.	Due to the nature of the sensors, parameters like TDS, turbidity, electrical conductivity, pH, and water level are a breakthrough in sensor technology.
2.	Using Machine Learning Models for Predicting the Water Quality Index. Published: May 2020, MDPI.	Karl-Erich Lindenschmidt	Surface water and groundwater quality are assessed and classified using the Water Quality Index (WQI).	AdaBoost-S2, GBM-S7, HGBM-S2, LightGBM-S6, XGBoost-S9 are best regarded among the GBM models.	Between the measured and anticipated WQI high or low values, there are slight differences.
3.	The quality of drinking water using Machine Learning. Published: June 2022, IJAERS.	Osim Kumar Pal	Data is gathered from public sources and presented in accordance with WHO. Several parameters like hardness, pH, organic carbon is essential for predicting water.	The most often used classification algorithms are ANN, CNN, DNN, DT and RF. A hybrid machine learning approach was suggested for water quality prediction.	ANN has 99 percent higher accuracy with a training error of 0.75 during the training period. It becomes difficult to predict drinkable water accurately.
4.	Groundwater quality forecasting using Machine Language. Published: January 2021, ScienceDirect.	Ali El Bilali	The conventional methods are more expensive, so the artificial intelligence models can overcome this issue through forecasting and evaluating water quality.	With the utilization of machine learning algorithms such as SVR and XGBoost, it is possible to predict these water quality factors with percentages above 80%.	The disadvantage of this system is, water is not monitored seamlessly, and it always needs human intervention.