

Efficient Water Quality Analysis & Prediction Using Machine Learning

S No.	Year	Author	Approach	Description	Advantages	Disadvantages
1	2016	Khan, Yafra; Chai Soo see	Predicting and Analyzing Water Quality using Machine Learning	Water quality prediction model with the help of water quality factors using Artificial Neural Network (ANN) and time-series analysis.	<ul style="list-style-type: none"> • Reliable one with the prediction accuracy. • The future of water quality modeling seems to be very bright and remarkable 	<ul style="list-style-type: none"> • There needs to be a more user-centric approach towards tackling the water quality issues, by using user-friendly tools and an interactive environment so that the solution actually benefits in tackling water quality issues.
2	2020	AliEl Bilali, AbdeslamTaleb	Prediction of irrigation water quality parameters using machine learning models in a semi-arid environment	Predict the irrigation water quality parameters that are used for assessing water suitability in agricultural purposes using measurable input variables such as Electrical Conductivity (EC) and pH parameters. This section presents the training of machine learning models.	<ul style="list-style-type: none"> • Among 8 Machine learning models, 6 models are valuable for accurately predicting 8 from 10 IWQ parameters using the EC and pH as input variables. • Implementing a sensor to measure the input features at water resources that are used for agricultural purposes. 	<ul style="list-style-type: none"> • can be expensive. • Not all models have been able to numerically predict the magnesium absorption ration (MAR) and the permeability index (PI), so classification models may be able to improve the accuracy of predictions.

3	2021	Yogalakshmi S. Mahalakshmi A.	Efficient Water Quality Prediction for Indian Rivers Using Machine Learning	The AI calculation is utilized for anticipating the outcome. A notable AI calculation, for example, Gradient Boost, Naive Bayes, Random Forest, Decision Tree, and Deep learning algorithms were used for data interpretation and analysis.	<ul style="list-style-type: none"> • Elective technique for AI to foresee water quality utilizing negligible and effectively accessible water quality boundaries. 	<ul style="list-style-type: none"> • Incorporating the findings of this exploration in an enormous scope IoT-based internet observing framework utilizing just the sensors of the necessary boundaries.
4	2021	Bharath Singh , Nirmitha , Kaviya S	Smart Urban Water Quality Prediction System Using Machine Learning	A webpage interfaced with the Machine Learning model is created to upload sensor values and the corresponding water quality is predicted.	<ul style="list-style-type: none"> • This project can be used in urban areas to predict the quality of the drinking water thereby preventing the spread of diseases such as dysentery, typhoid and cholera due to consumption of contaminated water. • System is low cost and efficient 	<ul style="list-style-type: none"> • The lifetime of the low cost sensors are less and might require the frequent purchase of new sensors. Internet Connectivity and times may be a problem, since data won't be updated.