LITERATURE SURVEY

Title & Author(s)	Year	Technique(s)	Findings/ Inference
"Dissolved Oxygen Prediction Using Support Vector Machine" Afifah Tarmizi, Ali N. Ahmed, A. El-Shafie	2014	Support Vector Machine	Five water quality parameters were selected for the SVM modeling in this study that is temperature (Temp), water pH, electrical conductivity (COND), nitrate (NO) and ammonia nitrogen (NH -NL). The model had the ability to simulate water quality parameters to accurately prediction error are relatively small.
"Prediction of water quality of euphrates river by using artificial neural network model (spatial and temporal study)" Thair S.K.1 , Abdul Hameed M. J. 1 , and Ayad S. M.2.	2014	Artificial Neural Network model (ANN)	Artificial Neural Network model (ANN) model was used for prediction and forecasting the monthly Total Dissolved Solid (TDS) parameter in water. In the ANN model calibration, a computers program of multiple regressions (MLR) was used to obtain a set of coefficients for a linear model.
"Predictive Analysis of Water Quality Parameters using Deep Learning" Solanki, A., Agrawal, H., & Khare, K.	2015	Deep Learning, Unsupervised learning, Deep belief network	The study shows that deep learning techniques which use unsupervised learning to provide accurate results as compared to the techniques based on supervised learning. Merit of the unsupervised learning algorithms are evaluated on the basis of metrics such as mean absolute error and mean square error to examine the error rate of prediction.
"Water Quality Monitoring Using Machine Learning And IOT" C.Ashwini, Uday Pratap Singh, Ekta Pawar, Shristi.	2019	IoT, machine learning, neural network,	Data obtained from the sensors are recorded in the database and further sent for analysis. The neural network algorithm is used for predicting the result. It is used to obtain non-linear relationship for predicted output. The system sends the alert message to user when any of the parameters are lower than the standard values
"River Water Quality Analysis and Prediction Using GBM" Al-Akhir Nayan, Muhammad Golam Kibria, Md. Obaidur Rahman, Joyeta Saha.	2020	Gradient Boosting Model (GBM)	With the help of automatic water parameter measuring tools, samples were collected from numerous rivers of Bangladesh. The GBM was instructed utilizing the samples collected from year 2013 to 2019. The model functions using specified arguments. The model evaluates the water quality and anticipates the

			change that demonstrates the future water quality.
"Proposition of New Ensemble Data-Intelligence Models for Surface Water Quality Prediction" Ali omran al-sulttani , Mustafa al-mukhtar , Ali b. roomi, Aitazaz ahsan farooque , Khaled mohamed khedher Zaher mundher yaseen.	2021	Machine Learning	Different ensemble machine learning (ML) models including Quantile regression forest (QRF), Random Forest (RF), radial support vector machine (SVM), Stochastic Gradient Boosting (GBM) and Gradient Boosting Machines (GBM_H2O) were developed to predict the monthly biochemical oxygen demand (BOD) values. The reliability of the applied models is evaluated based on the statistical performance criteria of determination coefficient (R^2), root mean square error (RMSE), mean absolute error (MAE), Nash-Sutcliffe model efficiency coefficient (NSE), Willmott index (d), and percent bias (PBIAS)
"Drought Prediction and Water Quality Estimation using Satellite Images and Machine Learning" Anurag Dash, Sakshi Jetley, Anushree Rege, Shalu Chopra, Rohini Sawant.	2022	Machine Learning -Random Forest prediction model	Uses machine learning methodologies to predict drought and its severity by using satellite images Data is acquired from Landsat 8 to assist with the drought prediction, soil moisture index is captured by Sentinel-1(SMAP). The Random Forest prediction model is used to predict drought and its severity. Calculation of water quality using Chlorophyll-a as a primary parameter implemented.
"Water quality prediction system using LSTM NN and IoT" Ann Laverene Lopez, N A Haripriya, Kavya Raveendran, Sandra Baby, C V Priya.	2022	Machine Learning and IOT	Long Short-Term Memory Neural Network (LSTM NN) was used to bring out the time series pattern in the data. The sensors like pH sensor, turbidity sensor and total dissolved solids (TDS) sensor were used to read the current water quality parameters and this data was used to predict the future parameter values.