

LITERATURE SURVEY

PROJECT NAME	AUTHORS NAME	OUTCOME
Predictive Analysis of Water Quality Parameters using Deep Learning	Archana Solanki , Himanshu Agrawal, Kanchan Khare	Lakes and reservoirs are important water resources. Reservoirs are vital water resources to support all living organism. They provide clean water and habitat for a complex variety of aquatic life. Water from such resources can be used for diverse purposes such as, industry usage, agriculture and supplies for drinking water and recreation and aesthetic value. The comparison of results show that robustness can be achieve by denoising autoencoder and deep belief network and also successfully handle the variability in the data. 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.
Predicting and Analyzing Water Quality using Machine Learning	Yafra Khan , Chai Soo See	The deteriorating quality of natural water resources like lakes, streams and estuaries, is one of the direst and most worrisome issues faced by humanity. The effects of un-clean water are far-reaching, impacting every aspect of life. Therefore, management of water resources is very crucial in order to optimize the quality of water. The effects of water contamination can be tackled efficiently if data is analyzed and water quality is predicted beforehand. This issue has been addressed in many previous researches, however, more work needs to be done in terms of effectiveness, reliability,

		<p>accuracy as well as usability of the current water quality management methodologies. The goal of this study is to develop a water quality prediction model with the help of water quality factors using Artificial Neural Network (ANN) and time-series analysis. This research uses the water quality historical data of the year of 2014, with 6-minutes time interval. Data is obtained from the United States Geological Survey (USGS) online resource called National Water Information System (NWIS). For this paper, the data includes the measurements of 4 parameters which affect and influence water quality. For the purpose of evaluating the performance of model, the performance evaluation measures used are Mean-Squared Error (MSE), Root Mean-Squared Error (RMSE) and Regression Analysis. Previous works about Water Quality prediction have also been analyzed and future improvements have been proposed in this paper.</p>
Efficient Water Quality Prediction Using Supervised Machine Learning	Umair Ahmed, Rafia Mumtaz, Hirra Anwar, Asad A.shah, Rabia Irfan, Jose Garcia-nieto	<p>Water makes up about 70% of the earth's surface and is one of the most important sources vital to sustaining life. Rapid urbanization and industrialization have led to a deterioration of water quality at an alarming rate, resulting in harrowing diseases. Water quality has been conventionally estimated through expensive and time-consuming lab and statistical analyses, which render the contemporary notion of real-time monitoring moot. The alarming consequences of poor</p>

		<p>water quality necessitate an alternative method, which is quicker and inexpensive. With this motivation, this research explores a series of supervised machine learning algorithms to estimate the water quality index (WQI), which is a singular index to describe the general quality of water, and the water quality class (WQC), which is a distinctive class defined on the basis of the WQI. The proposed methodology employs four input parameters, namely, temperature, turbidity, pH and total dissolved solids. Of all the employed algorithms, gradient boosting, with a learning rate of 0.1 and polynomial regression, with a degree of 2, predict the WQI most efficiently, having a mean absolute error (MAE) of 1.9642 and 2.7273, respectively. Whereas multi-layer perceptron (MLP), with a configuration of (3, 7), classifies the WQC most efficiently, with an accuracy of 0.8507. The proposed methodology achieves reasonable accuracy using a minimal number of parameters to validate the possibility of its use in real time water quality detection systems.</p>
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