Efficient Water Quality Analysis & Prediction Using Machine Learning

ABSTRACT

For human existence, water is a necessary resource. Water makes up more than 60% of the human body. Every cell, every type of organism, and all the tissues in our bodies are made up of water. Safe drinking water is a fundamental human right, a necessity for good health, and a component of sensible health protection policies. As a result, water promotes body temperature regulation and ensures that other bodily processes run as they should. At the national, regional, and municipal levels, this is crucial as a matter of health and development. Investments in water supply and sanitation have been shown to provide a net economic advantage in some areas because they reduce the negative impacts on health and the expenses associated with providing medical treatment. However, in recent years, water pollution has escalated into a significant issue that is affecting water quality.

Therefore, it is now crucial to create a model that forecasts water quality in order to both control water pollution and warn people when low quality is detected. These factors drove us to use the benefits of machine learning techniques in this work to create a model that can predict the water quality class and then the water quality score. Temperature, pH, turbidity, and coliforms are the four water characteristics on which the strategy we suggest is based. Predicting the water quality index has proven to be important and successful when using several regression techniques. Additionally, the use of the artificial neural network provides the most highly efficient way to classify the water quality.