**Water Potability Analysis and Prediction**

Water is one of the largest resources on earth. People need water to sustain life, including drinking water. It is important to know whether drinking water - human life resource - is enough for everyone now and in the future. However, water resources are not evenly distributed everywhere on the planet. While the water resource is rich in some countries and regions, it is not enough for some other regions. The analysis of different region’s water resources should be done individually. In this paper, the authors analyze the potability of water by using an Indian water potability dataset from Kaggle. More specifically, this paper talks about each factor of water that influences water potability through statistical methods - binomial distribution and the k-nearest neighbor algorithm. Also, the authors build a model that allows people to predict the potability of a water resource by the data of each factor of that resource. According to the research, the features of water are not related to each other. All the features should meet a specific standard in order to get potable water.

**Classification of Water Potability Using Machine Learning Algorithms**

Clean water is one of the basic needs of everyday life. Recently, an ongoing process has been shown to improve water quality, making water less suitable for use. To solve this problem, research is done using a machine learning model. The Decision Tree Algorithm is used by Naïve Bayes algorithm in this type of machine learning to support drinking water quality. The two types of performance are compared in this work. K-fold cross credentials are used to evaluate our machine learning model. Results obtained in the decision tree algorithm have the best results in the configuration with an accuracy value of 97.23%.

**Population and water resources: a delicate balance**

**PIP:**Various avenues exist to minimize the effects of the current water crisis in some regions of the world and the more widespread problems that will threaten the world in the future. Active management of existing water resources and a reduction in population growth in water-scarce areas are needed to minimize the effects of the water crisis. National boundaries do not effect water systems. Cooperation and commitment of local, national, and international governments, institutions, and other organizations are needed to manage water systems. Development in each country must entail conscientious and effective balancing of unavoidable manipulations of the land and the unavoidable environmental impacts of those manipulations. The conditions of environmental sustainability must include protection of land productivity, ground water potability, and biodiversity. Humans must deal with these factors either by adopting methods to protect natural systems or by correcting existing damage and reducing future problems. They need to understand the demographic forces in each country so they can balance society's rising needs for clean water with the finite amount of water available. Factors affecting future needs at all levels include rapid rural-urban migration, high fertility, and changing patterns of international population movement. Given an increased awareness of global water systems, demographic trends, and active management of resources, the fragile balance between population and water can be maintained.