

Project Proposals

Final Year Project - CSE

Group Number 10 :

Rahul Kumar Gupta (1815125)

Joythish Reddy Evuri (1815079)

Ritu Agarwalla (1815069)

Bukya Hemanth Naik (1815111)

Apil Thapa (1815084)

Under the guidance of : Dr. Thoudam Doren Singh Sir



Contents

1. Potability of water
2. Crop disease detection
3. Trends in Research

1. Potability of Water

a. Problem Statement :

Unsafe drinking water contributes to 86% of the diarrhoeal **diseases** worldwide.

1.8 million people die every year from diarrhoeal diseases (including cholera); 90% are children under 5, mostly in developing countries

So, there is an urgent need to ponder upon these facts and a good amount of research is needed in this regard. As water is the most fundamental essentials of all life forms on earth.

b. Our Solution :

We aim to do research to find out the reasons and components contributing to water being unsafe for human consumption.

Also, after finding out the reasons we will try to build an AI trained model which will be fed with some existing datasets and would predict the portability of water for a given region based on the chemical and physical properties of water in that area.

- c. This not only leads to finding out the major causes of contaminated water but also gives us a way to alarm the people of that area to look for an alternative for water supply or do some preprocessing before consumption.
- d. Research Scope : Finding out various major causes which are attributed to water being contaminated and unsafe for human consumption.
- e. Tentative Technologies involved : Artificial Intelligence/Machine Learning, Web Development, etc.
- f. We also aim to provide a web based solution to enter water's compositions in an area and predict whether it is portable or not.

2. Crop disease detection

a. Problem Statement:

Indian economy is dependent on agricultural productivity. Over 70% of rural homes depend on agriculture. Agriculture pays about 17% to the total GDP and provides employment to over 60% of the population. Therefore detection of plant diseases plays a vital key role in the arena of agriculture.

Indian agriculture is composed of many crops like rice, wheat. Indian farmers also grow sugarcane, oilseeds, potatoes and non-food items like coffee, tea, cotton, rubber. All these crops grow based on the strength of leaves and roots.

Therefore detection of crop diseases plays a vital key role in the arena of agriculture.

b. Solution :

We aim to do research to find out the reasons and components contributing to crop diseases.

Also, after finding out the reasons we will try to build an ML trained model which will be fed with some existing datasets and predict the disease. Biomedical is one of the fields used to detect plant diseases. In the current day among this field, the image processing methods are a suitable, efficient and reliable field for disease detection with help of plant leaf images.

c. Accurate detection of plant disease is needed to strengthen the field of agriculture and economy of our country. Various types of Disease kill leaves in a plant. Farmers get more difficulties in identifying these diseases, they are unable to take precaution on those plants due to lack of knowledge on those diseases.

d. Research Scope:

Detection of plant disease through some automatic technique is beneficial as it reduces a large work of monitoring in big farms of crops, and at a very early stage itself it detects the symptoms of diseases i.e. when they appear on plant leaves.

e. Tentative Technologies involved :

Image processing, Machine Learning/ Deep Learning, Web Development, etc.



3. Trends in Research

a. Problem Statement:

The only constant in our world is change. We are facing a change that is becoming faster and faster in many areas. It brings risks and opportunities. But it also brings many opportunities and possibilities for new innovations.

Today, potential for the future is to be recognized and solutions are to be developed that will be needed tomorrow. The future is being shaped instead of the future doing the shaping. And this requires good, well-founded information on possible trends, future developments and their effects.

b. Solution :

We aim to do research and analyze the trending research areas. The number of students opting for research and the domains researchers (either be the professors or students) are choosing. Through data visualization we will be able to catch the recent and near future trends in research.

c. This becomes important in a sense that we would be able to know, what are the technologies we are going to get acquainted with in future or how far our ability to innovate and discover things may lead us to.

d. Tentative technologies : Data visualization techniques