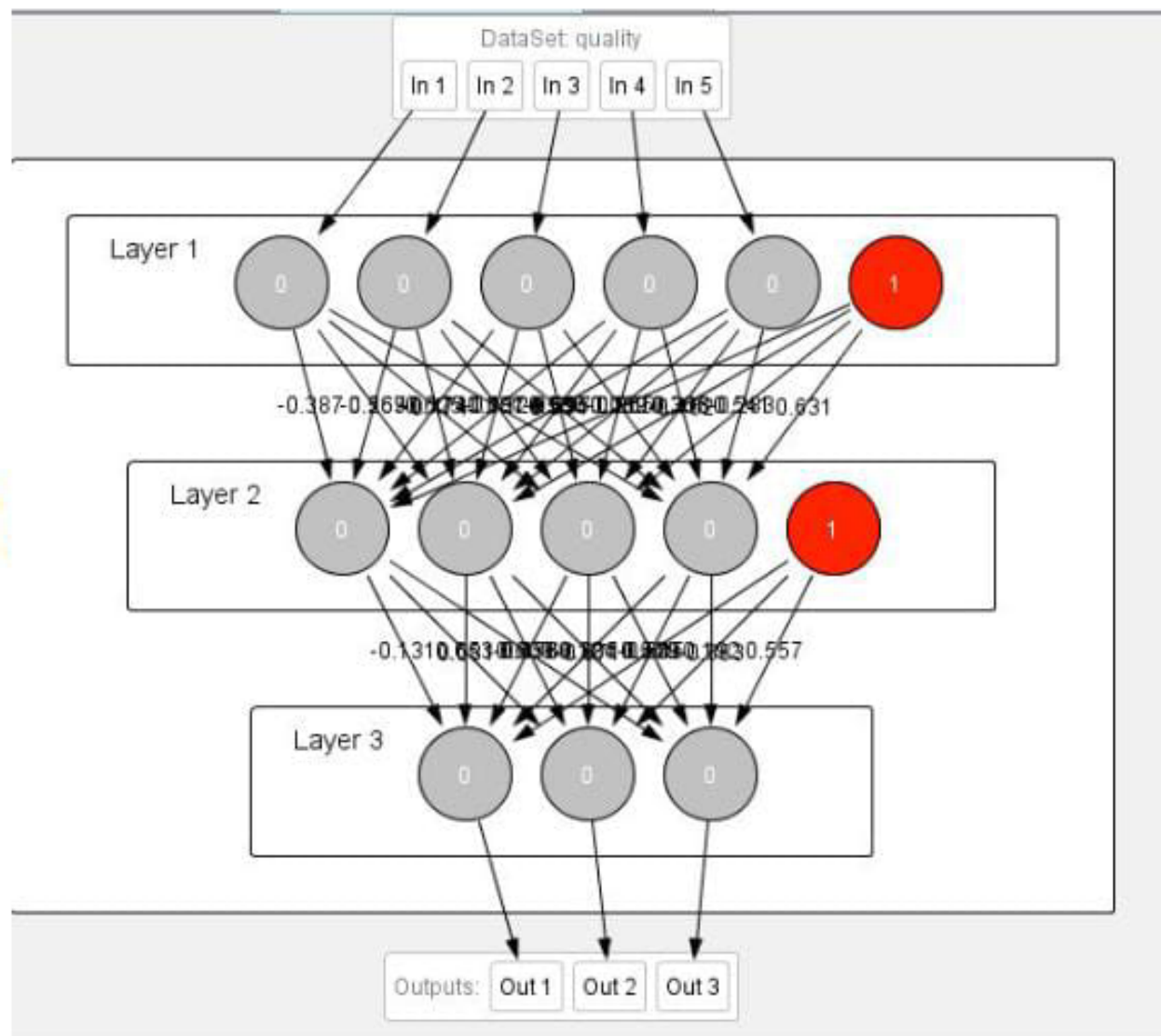


Disadvantages of water quality monitoring system

The disadvantage of this system is, **water is not monitoring seamlessly, and it always needs a human intervention.** PROPOSED METHOD: In our proposed method, an assembled Arduino microcontroller is used as the core controller of the system.

Current water quality monitoring system is a manual system with a monotonous process and is very time-consuming. This paper proposes a sensor-based water quality monitoring system. The system consists of several sensors which is used to measure physical and chemical parameters of the water. The main components of Wireless Sensor Network (WSN) include a microcontroller for processing the system, communication system for inter and intra node communication and several sensors. Real-time data access can be done by using remote monitoring and Internet of Things (IoT) technology. Data collected at the apart site can be displayed in a visual format on a server PC with the help of Spark streaming analysis through Spark MLlib, Deep learning neural network models, Belief Rule Based (BRB) system and is also compared with standard values. If the acquired value is above the threshold value automated warning SMS alert will be sent to the agent. The uniqueness of our proposed paper is to obtain the water monitoring system with high frequency, high mobility, and low powered. Therefore, our proposed system will immensely help Bangladeshi populations to become conscious against contaminated water as well as to stop polluting the water.



Multilayer Perceptron Model designed in Neuroph Studio. Multi-layer neural network model is depicted above having five inputs In 1, In 2, In 3, In 4, In 5 in input layer, a hidden layer with four neurons and three neurons in output layer. There are two bias input neuron connected to hidden layer neurons and output layer neurons. The quality parameters are labelled datasets including desired outputs of specific combination of inputs. The neural network will produce output to classify water quality as either good or bad.

Benefits or Advantages of IoT based Water Quality Monitoring System

Following are the benefits or advantages of IoT based Water Quality Monitoring System are as follows.

- The boat is mobile in nature and hence large number of samples are easily collected from different locations in less time.
- It is very easy to maintain the IoT based water quality monitoring system as all the electronic boards are available in the boat itself.
- The system is very cheap as the hardware and software does not cost much.

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- Machine learning techniques have made it very easy to plot the data collected in various formats for proper analysis.
- Cloud storage platforms such as adafruit, azure helps in storing the sensor data immediately and wirelessly to the robust servers.