

## ABSTRACT

Rivers are an important element of its environment; river water sustains and prospers living beings in its surrounding. When river water becomes polluted, though, it becomes useless or even harmful to its ecosystem.

This Final Project proposes an *IoT (Internet of Things)* based system as a solution to counteract river pollution. The system is composed of a hardware that measures *pH*, temperature, and turbidity of the water – then transmitting the data via *LPWAN (Low Power Wide Area Network)*, more specifically *LoRa (Long Range)*. Successfully transmitted data will be used to train an *ANN (Artificial Neural Network)* which is used to recognize and predict patterns of river water pollution. The monitoring and prediction results will be accessible via a web app.

This Final Task has successfully designed and built a system that implements an ANN for recognizing patterns in river conditions, to predict potential river pollution. Early detection of river pollution can serve as vital information of authorities to act in preventing or anticipating river pollution.

**Keywords:** *Artificial Neural Network, water pollution*