**Artificial Intelligence Approach to Predicting River Water Quality: A Review**

Recent models use in predicting water quality:

ANN, SVM, k-NN,

ANFIS – adaptive network-based fuzzy inference system,

BPNN - back propagation NN,

GRNN – generalize regression NN,

RBNN – radial basic NN,

MLPNN – multi-layer perceptron NN,

MLFFNN – multi-layer feed forward NN,

Hybrid with wavelet transform.

**A diagram of a flowchart

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**Application of adaptive neuro-fuzzy inference system (ANFIS) to estimate the biochemical oxygen demand (BOD) of Surma River**

* Data normalization, correlation.
* Input:
  + hardness, alkalinity, pH and DO
  + All

A close-up of a text

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* Output: BOD

**A screenshot of a graph

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Model: Adaptive neuro-fuzzy inference system (ANFIS)

A diagram of a structure

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**Artificial neural network modeling of the water quality in intensive Litopenaeus vannamei shrimp tanks**

Parameters:

* DO, temperature, TUR, pH, TAN, NO­­2-N, NO­­3-N, DIP, Chl-a, COD, BOD.
* DO and TUR is not use as input variables (based on correlation).

Model:

* Back propagation ANN
* With data normalization input variables.

**An ANN Application for Water Quality Forecasting**

Overview:

* Predict/forecast water quality/temperature.
* Focus on Singapore coastal waters.

Model:

* ward net (back-propagation ANN)
* GRNN

Input, output:

A screenshot of a computer

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Evaluation metrics:

**Prediction of Dissolved Oxygen Content in Aquaculture of Hyriopsis Cumingii Using Elman Neural Network.**

Model: Elman NN Architecture

A diagram of a network structure

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Result:

A graph with lines and dots

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**Water temperature prediction in sea cucumber aquaculture ponds by RBF neural network**

Model:

**A diagram of a network

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