O 28.   GRAPHICAL USER INTERFACE DESIGN FOR REMOVAL OF OUTLIERS DATA: YESILIRMAK RIVER EXAMPLE

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ABSTRACT: Rapid population growth and increased industrial activities have threatened water resources recently. To overcome these problems, important measures become to protect water resources and monitor pollution. Within this context, online monitoring stations have been used for water pollution monitoring. More frequent monitoring and collection of a large amount of data have been carried out thanks to online monitoring stations.

In recent years, advancements in data mining and computer technologies have enabled the development of models for various parameters. However, data preprocessing and data quality are important in model development.

In this study, removing outlier values in the dataset using the data collected from an online monitoring station on the Yeşilırmak River between 2007 and 2009. Dissolved oxygen (luminescence dissolved oxygen, LDO), temperature, pH, conductivity, total organic carbon (TOC), nitrate nitrogen (NO3-N), and ammonium nitrogen (NH4-N) data was evaluated. Median, Mean, Grubbs, Gesd, and interquartile range methods were used to remove outlier data. After the models developed, all models were integrated into a graphical user interface developed in the MATLAB environment. As a result of this study, the median algorithm removed more data points among the outlier data-removing methods.

Keywords: Outlier Detection, Statistical Approach, River Water Quality Data