

A Survey on Artificial Intelligence Techniques for Various Wastewater Treatment Processes

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Abstract

Pollutant removal percentage is a key parameter for every WWTPs, and it is crucial to predict pollutant removal efficiency. The efficiency of pollutant removal processes can be increased with the help of modeling and its optimization. Statistical models are not practical enough for wastewater treatments due to complicated relationship among input and output parameters. AI models are generally more flexible while modeling complex datasets with missing data and nonlinearities. Many AI techniques are available, and the aim is to sort out the best AI technique to design predictive models for WWTPs. Deep Learning and Ensemble are the main techniques reviewed in this work. The Ensemble Learning models showing the most successful performance among other techniques by generally showed their accuracy and efficiency.

Keywords: Artificial intelligence; Deep learning, Wastewater treatment processes.