Detection of Hazardous Gas Composition in Sewer Pipeline and to Identifying Safe Working Condition in Sewer Pipelines

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Abstract

In this paper, we formulated around a certifiable issue identified with sewer-pipeline gas detection using the approaches which classified the problem into two categories, also known as classification-based approach. The primary objective of this project is to recognize the dangerous gases present inside sewer-pipeline to offer protected access to sewer-pipeline with the goal that the human fatalities, which happen due to presence of toxic gases can be avoided. The dataset is created through mixing all the different gases present in sewer pipelines under different situation to make sure all the cases are taken into consideration, these datasets were sorted out to plan a predictive model that could distinguish/characterize hazardous and non-hazardous circumstance of sewer-pipeline. To design such prediction model, classification algorithms were utilized and their performance were assessed and thought about, both exactly and factually, over the collected dataset. In addition, the project also will predict the composition of gases present in the sewer pipeline and display the values for the better understanding of the condition present in sewer pipeline. The final observation of this study demonstrated that the
performed of instance based learning algorithm were superior to numerous different algorithms, for example, multi-layer perceptron, support vector machine, and so on. Also, it was observed that multi-scheme ensemble approach improved the execution of base indicators.

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Index Terms

Computer Science

Applied Sciences
Keywords

Classification-based approach, predictive model, multi-layer perceptron, support vector machine