

Peer Review

Review of: "LangGas: Introducing Language in Selective Zero-Shot Background Subtraction for Semi-Transparent Gas Leak Detection with a New Dataset"

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The manuscript describes the zero-shot based methodology for semi-transparent gas leakage detection. The new synthetic dataset is also described in the manuscript. The work is interesting and necessary. However, the manuscript lacks clarity in a few places and can be improved to make it more understandable, readable, and usable. A few suggestions to improve the manuscript:

1. The introduction section can place more emphasis on the need for the work. Statistical analysis of leakage detection can be added to highlight the necessity of detection.
2. All the words used in the title can be described in a better way.
3. The novelty can be specified clearly.
4. More literature review can strengthen the manuscript.
5. The need for a synthetic dataset can be clearly stated with practical validation of the standard available datasets.
6. The sections can be named appropriately.
7. Sections after the conclusion are creating confusion. Do they mean an appendix?
8. Why a synthetic dataset? Which gaps are filled using this dataset?
9. Validation of the synthetic data in the real world will add value and confidence to the dataset.
10. The dataset can be described in more detail.
11. More and cleaner samples can be part of the manuscript.
12. Which other methods are adopted in detection?

13. Why is background subtraction required in gas leak detection?
14. A proper name can be given to the dataset.
15. The MD/DL methods/frameworks need to be discussed in better ways to correlate their usability and applicability in the current work.
16. What is the role of prompts? Why are they used? Need to provide clarity.
17. Check for grammatical corrections and definitions of all acronyms.

Best wishes!

Declarations

Potential competing interests: No potential competing interests to declare.