Reviewer 3:

Thank you for reviewing our manuscript! Here are our responses:

**Feedback 1:** The system proposed could improve false negative cases. Please add some elaboration on how the system remedies the false positive cases.

**Author’s Response:** *Thank you for your feedback!*

*Yes, the use of dual modality could reduce the false negative cases. The proposed navigation is a fusion of vision and olfaction-based navigation. These two modalities work together to determine the final odor source location. The combination increases the probability of reducing overall false detection cases. In case one modality provides false detection, the probability is high that another modality can correct it.*

*We have added lines 396-401 in subsection 4.6 based on the feedback.*

**Feedback 2:** How the setup positions of fan will affect the experiment results?

**Author’s Response:** *Thank you for your feedback!*

*In our work, the fans were placed to create both laminar and turbulent airflow environments in the search area. In laminar flow environments, only one fan is employed, and it is placed behind the odor source to accelerate the plume diffusion rate and create a unified wind direction field (as presented in Figure 9 (1)). In turbulent flow environments, we used two fans and placed them at perpendicular positions to create a mixed and turbulent wind field (as presented in Figure 9 (2)).*

*In turbulent flow environments, the wind direction is not unified but mixed and turbulent. In such environments, correctly finding the odor source relying only on olfaction is harder, as presented in Table 2. However, the proposed navigation algorithm, which combines vision and olfaction, presented a high success rate of finding the odor source in both laminar and turbulent environments, showing the effectiveness of the proposed navigation algorithm.*

*To clarify this question, we have added few sentences in line 301-309.*