Thank you for providing feedback on the thesis report! Here are our responses:

**Feedback 1:** Add objectives of Chapter 2, 3 and 4 in Chapter 1 for clarity.

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

*To clarify the objectives of the study, subsection 1.0.1 (pages 2-3) has been added in Chapter 1. It includes the overall decision making model diagram of the thesis. It also includes specific objectives of Chapter 2, 3 and 4. The main objective of Chapter 2 is to discuss a robot platform development to validate a traditional ROSL algorithm with real-world experiments. The main objective of Chapter 3 is to validate incorporation of vision-sensing in ROSL with the proposed Vision and Olfaction Fusion Navigation algorithm. The main objective of Chapter 4 is to validate Multi-modal Reasoning-based ROSL navigation.*

**Feedback 2:** Show algorithm comparison with a validated algorithm.

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

*Based on your feedback, section 4.4 Results and Discussion (pages 45-48) is rewritten. Further experiments have been conducted to compare the Multi-modal Reasoning-based Navigation algorithm to a previously validated ROSL Navigation Algorithm according to the comparison method discussed in [1].*

*The section includes a new result table and additional figure of the robot trajectories. The results showed that there is no statistically significant difference between the previously validated Fusion Navigation Algorithm and the tested Multi-modal Reasoning-based Navigation algorithm. Furthermore, the Multi-modal Reasoning-based Navigation algorithm performed better in terms of Success rate, Average time spent, Average Distance Moved in two airflow environments. This validates the proposed Multi-modal Reasoning-based Navigation algorithm.*

[1] Hassan, Sunzid, Lingxiao Wang, and Khan Raqib Mahmud. "Robotic Odor Source Localization via Vision and Olfaction Fusion Navigation Algorithm." Sensors 24.7 (2024): 2309.

**Feedback 3:** Mention ‘reasoning capability’ LLMs as a motivation of Chapter 4.

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

*Based on your feedback, in page 36, we have added ‘reasoning capability’ of LLMs a motivation. A more detailed flow diagram of the Multi-modal Reasoning-based Navigation algorithm was also included in page 43.*

**Feedback 4:** Add a reference of the traditional olfaction-only ROSL navigation algorithm.

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

*According to your feedback, a reference of the traditional olfaction-only moth-inspired algorithm has been added in page 9.*