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From: K2S3

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Summary

Throughout this week, due to the COVID-19 pandemic, it was challenging to research or work on the projects. However, some related papers were reviewed by all members. Also, the three parts of the paper were revised: the Abstract, the Introduction, and the Literature Review.

For the next week, an outdoor test will be done at Professor Smith's farm using two drones. After collecting data, the data will be first trained using audio and image-based deep learning algorithms.

What K2S3 completed this week:

- Taking care of COVID-19 patients
    - During this week, most of the teammates got COVID-19, so it was really hard to work their job completely, and alternative ways to participate in the teamwork should be found.
- Researching the paper related to the project
    - To be able to have the outdoor tests, some more information is needed.
    - More papers related to the project have to be found, so lists to summarize some papers were made.
- Revising "Abstract" and "Introduction"
    - Revising sentences makes more sense.
    - The figures that explain the overview of the outdoor test were conducted.

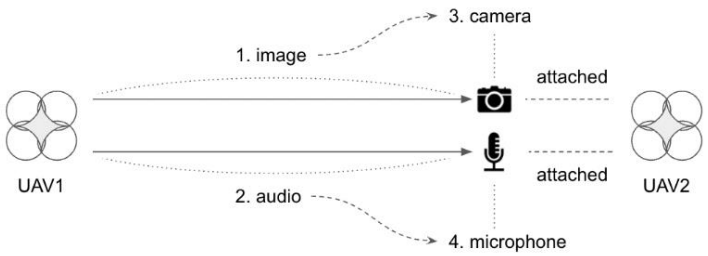

Figure 1: the structure that how does the project conduct outdoor experiments

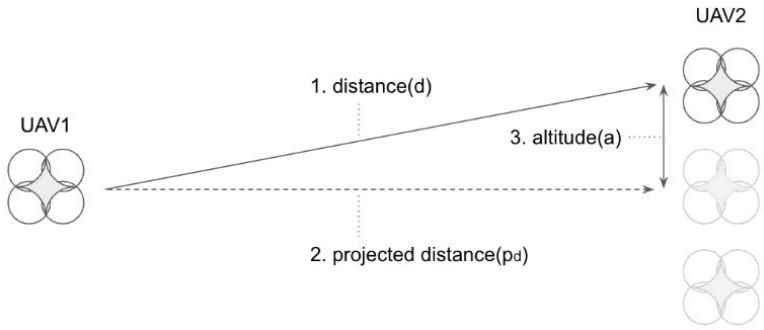

Figure 2: the overview of top view for the outdoor experiments

- Peer evaluation
    - All of K2S3 teammates submitted the peer evaluation score and comments.

Things to do by next week

- Having the first outdoor test
    - It was difficult to have an outdoor test due to the weather and the COVID-19 problem. For the next week, the first outdoor test will be done at Mr. Smith's farm, flying two drones in the air.
- Researching research papers that are related to position estimation of drones using audio and image-based features or multimodal of both audio and image-based features
    - Until this week, most research papers reviewed are based on drone detection. As the topic of the team is to estimate the position of drones, similar papers will be more researched. It is necessary to revise the literature review of the paper. The research papers will be reviewed by all members.

Problems or challenges:

- Tried hard to go outdoor experiment
    - As it was planned to go out Professor Smith's farm, but there are several team members who got COVID-19. So it was cancelled in the end.

References

- H. Liu, Z. Wei, Y. Chen, J. Pan, L. Lin, and Y. Ren, "Drone Detection Based on an Audio-Assisted Camera Array," *IEEE Xplore,* Apr. 01, 2017.
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- B. Yang, E. T. Matson, A. H. Smith, J. E. Dietz and J. C. Gallagher, "UAV Detection System with Multiple Acoustic Nodes Using Machine Learning Models," *2019 Third IEEE Int. Conference on Robotic Computing (IRC),* pp. 493-498, 2019 [Accessed Jun. 10, 2022].