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From: What is today's lunch?

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## Summary

The first data collection trip has been conducted with Mia. 150 audio samples were collected with DJI Phantom 4 Pro. 50 samples were collected in each classification; Unmanned Aerial Vehicle(UAV) with no payload, UAV with 1 payload, UAV with 2 payloads.

## What 'What is today's lunch?' completed this week:

- Data Collection trip

Data have been collected via the data split program. Once audio data are obtained, the data split program automatically splits data into a certain length of samples.

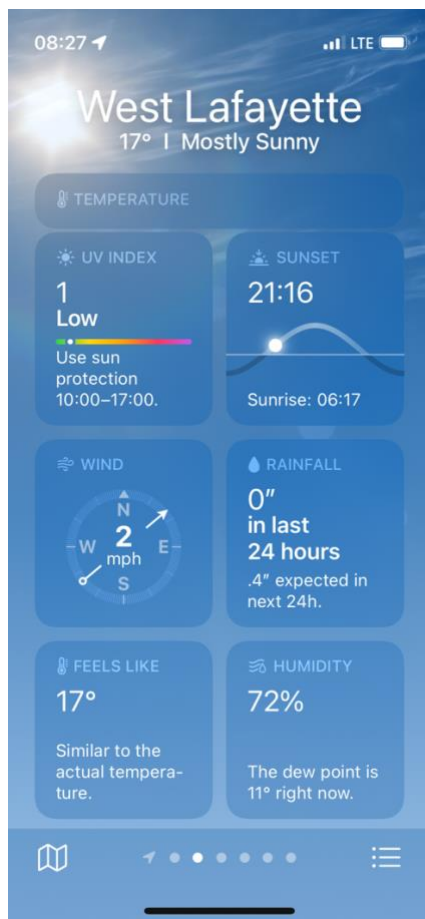


Fig. 1 Weather Condition

Still, at least 1000 samples are required as Deep Learning(DL) would be employed in data. Further data collection trips are scheduled in next week.

### **Things to do by next week**

- Employing CNN and RNN for data from previous works.
- Going on a data collection trip with Mia.

### **Problems or challenges:**

- There are datasets that Yaqin has collected. However, it is not large enough to apply Deep Learning algorithms. Therefore, it is required to collect more data or apply data augmentation to the original dataset.
- Payloads currently secured are too heavy for UAVs to carry. Payload weighs 560grams each. The battery dies fast when UAV carries payloads. It is required to get lighter payloads. Dr.Matson will take care of this issue by finding a lighter payload such as a hand grenade.

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