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## Summary

Elevator-pitch was successfully done. The draft of introduction and literature review part was drawn up and reviewed with the Purdue Student and Minji, our TA. The development consisted of sample example codes were created such as, collecting tabular and image datasets and making the drone to follow the specific face. Additionally, there was a discussion about whether to use the server and decided to use it.

## What “Gangsture” completed this week:

- **Completing elevator-pitch on Monday**
- **Writing the draft of the paper**
  - About introduction and literature review part.
  - Introduction part was completed and reviewed with Ms. Minji and the Purdue students.
  - Literature review part was not completed but was nearly summarized among 15 papers. 6 of them were selected as the most similar and helpful one. Furthermore, this part will be completed and reviewed by next week.
  - The project proposal was written for the project official meeting with Ms. Minji, which was useful for checking the current process of the project.
- **Running and making example codes for drone and datasets**
  - The map using coordinate of a moving drone was built on laptop.
  - Example code of drone tracking face via OpenCV was activated (haarcascade).
  - This project has to create own classification model. The classification model would recognize and distinguish between gestures.
  - For training and building the classification model, two types of datasets must be collected. One is the 3D coordinate system value and the other one is image or video.
  - So the Python sample code was created for collecting some 3D coordinate system values and images with using Mediapipe. This code needs to be developed by next week.

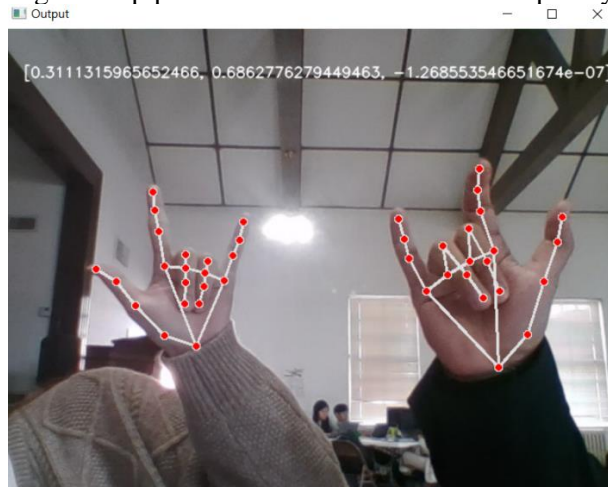


Fig. 1. The output of the Python sample code

- **Studying and searching about the architecture**
  - Studying the repository of MediaPipe and docs of the framework has been conducted for architecture reference.
  - How to connect between iOS application and the drone was searched and sample codes were written.

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

- Completing the literature review part of the paper and review it
- Building up the code for collecting datasets
- Studying about Node.js and building a server
- Controlling the drone to ascend from take-off to descend for landing
- Studying iOS with ML&Vision through the Apple official video

## **Problems or challenges:**

- **Equipment problem**
  - The drone wasn't shipped yet. When the drone arrives, we will try to control the drone with python code right away.
- **Problems of architecture**
  - Choosing the architecture was going longer.
  - What is decided certainly is using UDP socket because of the real time streaming video. Therefore, sample Python code of UDP socket is formed.
  - Whether the project uses server or not was the main topic discussed a lot. Computing power of iOS was the reason of this problem. So, the server will be used in this project.

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