There are two subcollections, data and scripts.

**Data**

Contains the data to replicate the analysis. Two different type of files:

\* \*\*#\\_nearest\\_neighbour\\_date.csv\*\* --> data is already processed and the nearest neighbour already calculated. This allows the analysis of comparison between Fuzzy Inference System and the Frontal Nearest Neighbour. Columns:

 \* Timestamp;

 \* ID\\_nearest\\_neigh: identity of the frontal nearest neighbour;

 \* Dist\\_nearest\\_neigh: distance in meters of the frontal nearest neighbour;

 \* Nearest\\_neigh\\_e: position of the following bird compared to the frontal nearest neighbour on the east|west axis.

 \* Nearest\\_neigh\\_n: position of the following bird compared to the frontal nearest neighbour on the north|south axis.

 \* Nearest\\_neigh\\_u: position of the following bird compared to the frontal nearest neighbour on the up|down axis.

 NB: the ID of the following individual is in the file name.

\* \*\*Flight\\_direction\\_pairs\\_date.csv\*\* --> data in the format to be used for the Fuzzy Inference System. Partially processed (already corrected for flight direction). Columns format: m\\_n(e/n/u) where:

 \* m: Identity leading bird;

 \* n: identity following bird;

 \* e/n/u: axis of reference (east|west, north|south and up|down respectively).

**Scripts**

All the code is written using Python.

\* inwake\\_detector.py --> script to call the other script, "detector.py". Requires information like where to find the input file (Flight\\_direction\\_pairs\\_date.csv ) and where to save the output. Outputs are multiple, the main one being for each bird a txt file with the timestamp, the identity of the leading bird and the position of the follower with regard to the leader.

\* detector.py --> script that implements the Fuzzy Inference Models and plots the main figures related to the model also present in the main manuscript.

\* Analyisis\\_Royal\\_Society.py ---> script carrying out all the analysis present in the manuscript and plotting figures. Input are the output files (.txt) of the inwake\\_detector.py script.