

# Vision-Based Close Formation Flight of Unmanned Aerial Vehicles

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This research project has been developed in collaboration between the Society of Hispanic Professional Engineers and the Flight Dynamics and Control Research Lab at the Aerospace Engineering Department at Embry-Riddle Aeronautical University.

## RESEARCH OBJECTIVE

Our research objective is to investigate and implement low-cost vision-based tracking algorithms for close formation missions.

## TECHNICAL OBJECTIVES

1. Developed an algorithm for vision-based tracking using a Raspberry- Pi camera module hardware.
2. Assembled a Quadcopter to be equipped with a camera module and a calibrated flight control computer.
3. Performed flight testing to obtain video data of a flying marked quadcopter as a reference for developing the tracking algorithm.
4. Test-fly two quadcopters in close formation using vision-based tracking algorithm.

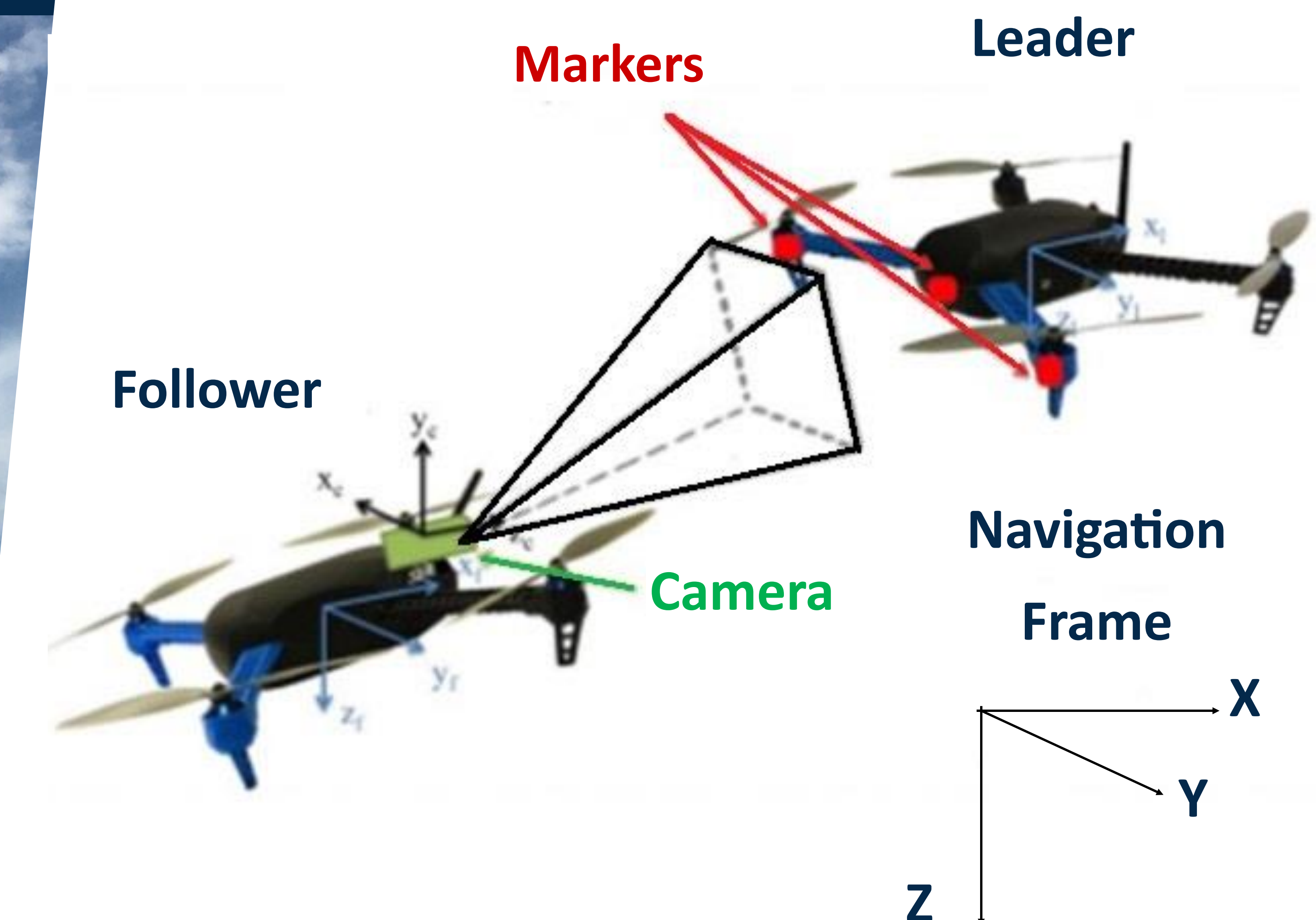


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## REFERENCES

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