DIP Project Report

DIPro

TEAM

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PROJECT

- ID - 23
- Title - Build a system to distinguish between drones and birds
- Github repo - https://github.com/dheerajpreddy/Bird-v-Drone

PURPOSE

The goal of the project is to build an image classifier that can successfully distinguish between a drone and a bird with sufficient accuracy using only image processing and machine learning techniques, without involving deep learning concepts.

METHOD

- Build an SVM with RBF kernel
- Use features such as Histogram of Gradients (HOG), image filters and others

RESULTS

Given an image, the classifier built must be able to determine whether the input image is a drone or a bird.

Input Image	Sample Classifier Percentage	Classifier Output
	80% Drone 20% Bird	Drone
	60% Drone 40% Bird	Drone
	20% Drone 80% Bird	Bird

TASK DIVISION

1. Dheeraj
    a. Collect drone dataset
    b. Collect and analyze various image processing features
    c. Build naive SVM
    d. Compare and contrast with other methods
2. Kshitij
    a. Collect bird dataset
    b. Collect and analyze various image processing features
    c. Modify SVM to add new features
    d. Compare and contrast with other methods

MILESTONES

Milestone	**Date of Completion**
Analyze different methods	12/10/2018
Build naive SVM	20/10/2018
Find & analyze features	5/11/2018
Modify SVM to include features	11/11/2018
Compare & contrast SVM to current state of the art classifiers	15/11/2018
Prepare final presentation	18/11/2018
Final Submission	29/11/2018