PROJECT TITLE: Hummingbird Classification

PROJECT SUMMARY (Brief description of the goal, key analysis plan, key data feature- especially if the data is complex)

The purpose of this project is to build a hummingbird species classification model. During this project I will collect hummingbird images, create image pre-processing code for the data set, create a binary (male/female) bird classifier, create a species classifier, and use the classifier to predict future bird images.

MILESTONES (Bullet point STEPs in your project. You can tag “DONE” for things are done)

Project Timeline:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Task Week | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Initial Project Proposal | | |  |  |  |  |  |  |  |  |
| Collect/classify photos from the web and my camera | | |  |  |  |  |  |  |  |  |
| Build data cleaning / hummingbird image processing tool | | |  |  |  |  |  |  |  |  |
| Create binary bird finder classification model | | |  |  |  |  |  |  |  |  |
| Create multi-categorical species classification model | | |  |  |  |  |  |  |  |  |
| Draft Final paper / GitHub repository / Kaggle uploads | | |  |  |  |  |  |  |  |  |
|  | | | | | | | | | | |
|  |  | Done/In-progress |  | Overdue | | |  | Planned | | |

PROPOSED ‘TO DO’ FROM THE LAST WEEK (Copy & Paste from your previous week’s TO DO)

1. Finalize a binary bird finder classification model. -complete
2. Finalize video species classification. – complete (although on-going as new species become available/arrive)
3. Run video’s through the image processing tools I have created and remove any non-bird or incomplete bird images. – in-progress

THIS WEEK’S PROGRESS (Give bullet points and briefly explain what you accomplished or dealt with some of the milestones during the week)

1. For the binary bird finder model, I used the ‘test data’ from last weeks update to rebuild a new dense model. It seemed to accurately identify birds in most of the videos. Some videos still did not read well.
2. I have evaluated all of the video’s collected using my video processing/binary bird finder model and have started to crop the photos so that the birds are primary in the frame and to eliminate all of the blurred or non-useful images. The assembled photo library is currently as follows:
   1. Black\_chinned\_female – complete
   2. Black\_chinned male – 14% complete
   3. Broadtailed\_female – complete
   4. Broadtailed\_male – 5% complete
   5. Rufous\_female – not yet started
   6. I have not seen any other species including Rufous male birds - they are migratory, so I may find some before this project is turned in.

ISSUES AND DISCUSSION (Bring up any difficulties and things to discuss. Also, send me a reminder if you want to discuss sooner)

No issues to discuss, the data science portion of this project is going great. The classification of hummingbirds is a little frustrating. If only they would smile at the camera more.

TO DO (Give bullet points and briefly explain your plans for the next week)

1. Complete photo processing and upload my photo’s to my Kaggle dataset.
2. Start building a multi-class model for the birds.

RESOURCE (Optional: list resource or links you want to share with me)

[1] <https://github.com/amandakkimball/Hummingbird-Data-Collection-Classification>