Khidmat Report
WWF Bird Recognition Model

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Contents

1 Introduction

1.1 Project Description

This project is aimed at creating and deploying a deep learning pipeline for WWF Pakistan to classify images of three different species of birds – namely: common myna, house crow, and the house sparrow. This project would serve as a proof-of-concept for a larger model that WWF can use to classify a larger number of birds using a mobile application.

1.2 About WWF

1.3 Work Plan

2 Weekly Work Log

2.1 Week 1:

Item	Activity	Time	ID

The total time spent on the Khidmat this week is as follows.

ID	Total Hours
st1	
st2	
st3	

2.2   Week 2:

Item	Activity	Time	ID

The total time spent on the Khidmat this week is as follows.

ID	Total Hours
st1	
st2	
st3	

2.3 Week 3:

Item	Activity	Time	ID

The total time spent on the Khidmat this week is as follows.

ID	Total Hours
st1	
st2	
st3	

2.4   Week 4:

Item	Activity	Time	ID

The total time spent on the Khidmat this week is as follows.

ID	Total Hours
st1	
st2	
st3	

2.5 Week 5:

Item	Activity	Time	ID

The total time spent on the Khidmat this week is as follows.

ID	Total Hours
st1	
st2	
st3	

2.6 Week 6:

Item	Activity	Time	ID

The total time spent on the Khidmat this week is as follows.

ID	Total Hours
st1	
st2	
st3	

2.7 Week 7:

Item	Activity	Time	ID

The total time spent on the Khidmat this week is as follows.

ID	Total Hours
st1	
st2	
st3	

2.8   Week 8:

Item	Activity	Time	ID

The total time spent on the Khidmat this week is as follows.

ID	Total Hours
st1	
st2	
st3	

3   Conclusion

4 Technical Overview

4.1 Resources

The resources that we used for this project can be categorized into two main categories: images, and technologies. Our first step was to acquire a set of images that would function as our dataset. We collected around 550 images for each of the three species of birds — the house crow, common myna, and the house sparrow. We used several different websites and online databases to find these images, we list these websites below:

1. https://search.macaulaylibrary.org/catalog?taxonCode=myna&mediaType=p&q=Common%20Myna

2. https://ebird.org/media/catalog?taxonCode=commyn&mediaType=p&sort=rating_rank_desc&q=Common%20Myna%20-%20Acridotheres%20tristis

3. https://ebird.org/media/catalog?taxonCode=houcro1&sort=rating_rank_desc&mediaType=p&regionCode=

4. https://search.macaulaylibrary.org/catalog?taxonCode=houcro1&mediaType=p&region=Pakistan%20(PK)&regionCode=PK&q=House%20Crow%20-%20Corvus%20splendens

5. https://www.kaggle.com/gpiosenka/100-bird-species

6. https://search.macaulaylibrary.org/catalog?taxonCode=houspa&mediaType=p&q=House%20Sparrow

7. https://ebird.org/media/catalog?taxonCode=houspa&mediaType=p&sort=rating_rank_desc&q=House%20Sparrow%20-%20Passer%20domesticus

All collected images can be viewed at https://drive.google.com/drive/folders/18k-roE_VJSB1dcrhvN1y_EosVF7Kb0dY?usp=sharing.

To preprocess our images, convert them into a usable dataset, and to create our deep learning model, we had to rely on several different preexisting tools.

4.2 Overview of CS Techniques Used

This project was an amalgamation of several different aspects of computer science techniques. The process can be summarized into main steps:

1. Data Collection

2. Image Preprocessing

3. Construction of Neural Network

4. Testing and Optimization

4.3 Codebase and Documentation

Khidmat Completion Form

To be completed by the external supervisor.

Please use the space below to provide any comments you may have on the students' performance, the Khidmat program, or any other feedback you want to share with Habib University's Khidmat committee. We can also be reached at khidmat@sse.habib.edu.pk.

_____

I hereby certify that I supervised XXX and XXX for the Khidmat described in this report. Furthermore, that I have read and agree with the weekly updates included in this report. My signature below marks the successful completion of the work undertaken for the Khidmat.

_____&_____

Name and signature   Location and date