Bird Vocalization Classification

Bird species identification from recordings.

Overview

01
Purpose
- Track bird migration patterns
- Bird identification for hobbyists

02
Benefits
- Easier to capture sound than photos
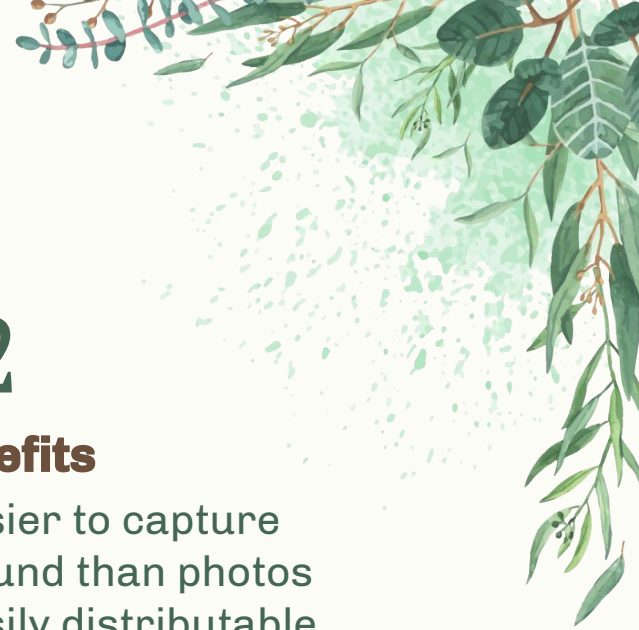- Easily distributable

03
Consumer Applications
- Phone App
- eBird like systems

04
Research Applications
- Automated bird migration tracking (at night)

The Data

source

Files from Kaggle
and xeno-canto.org

61,284 mp3

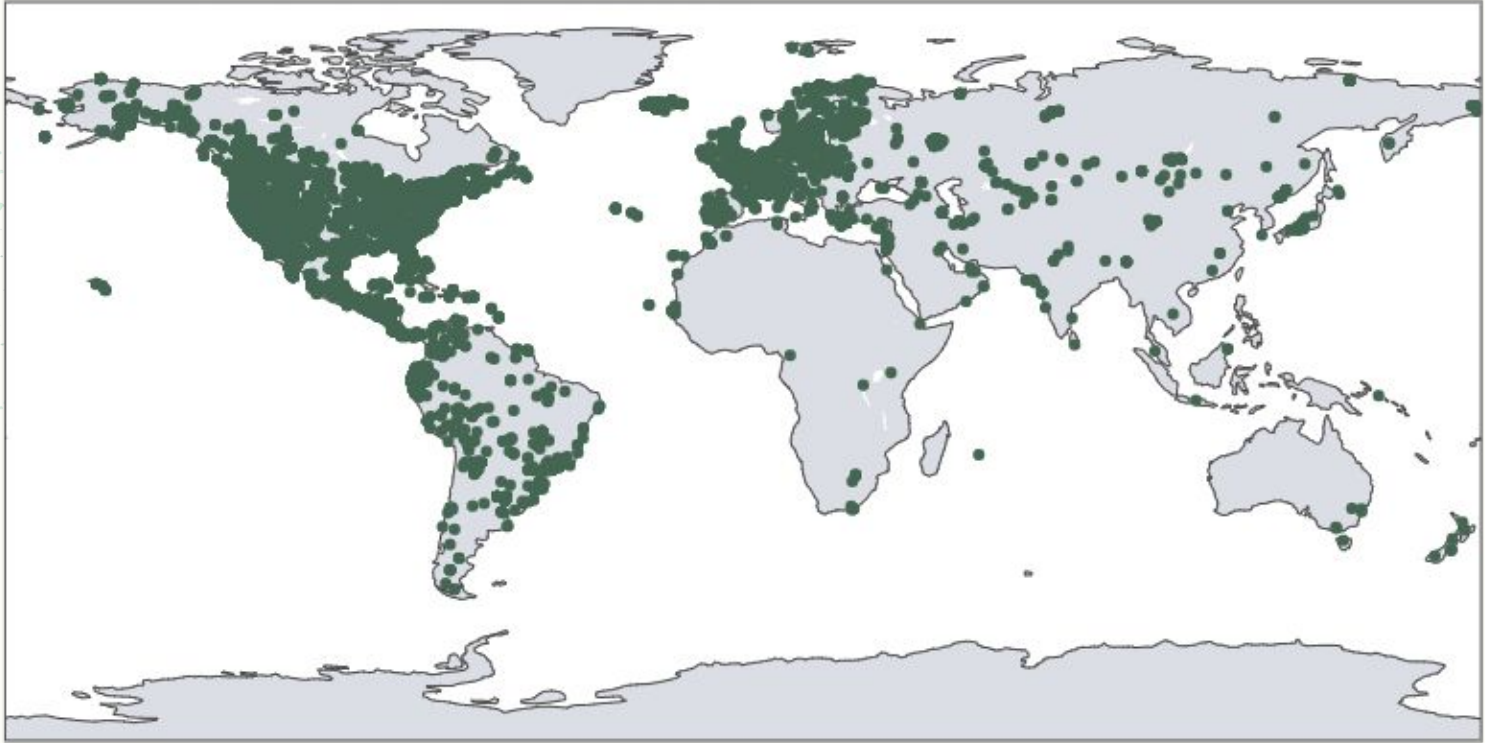65 Gb of compressed
audio data for
264 species

Varying Length

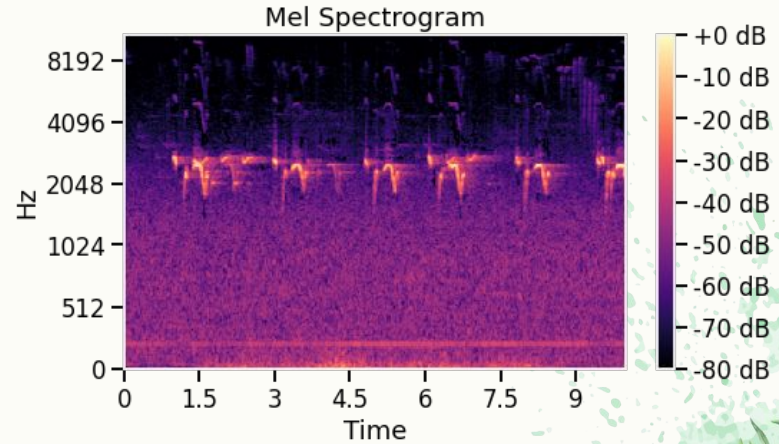From 1 second to
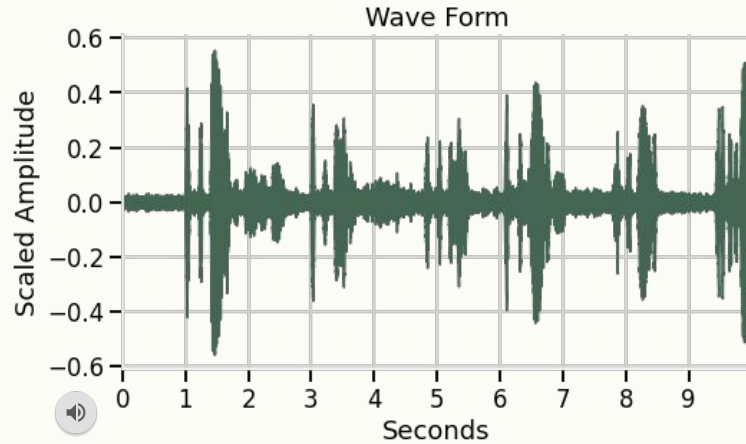38 minutes long

Recording Locations

Data Processing

- 10 Second samples
- Converted to Mel Spectrograms
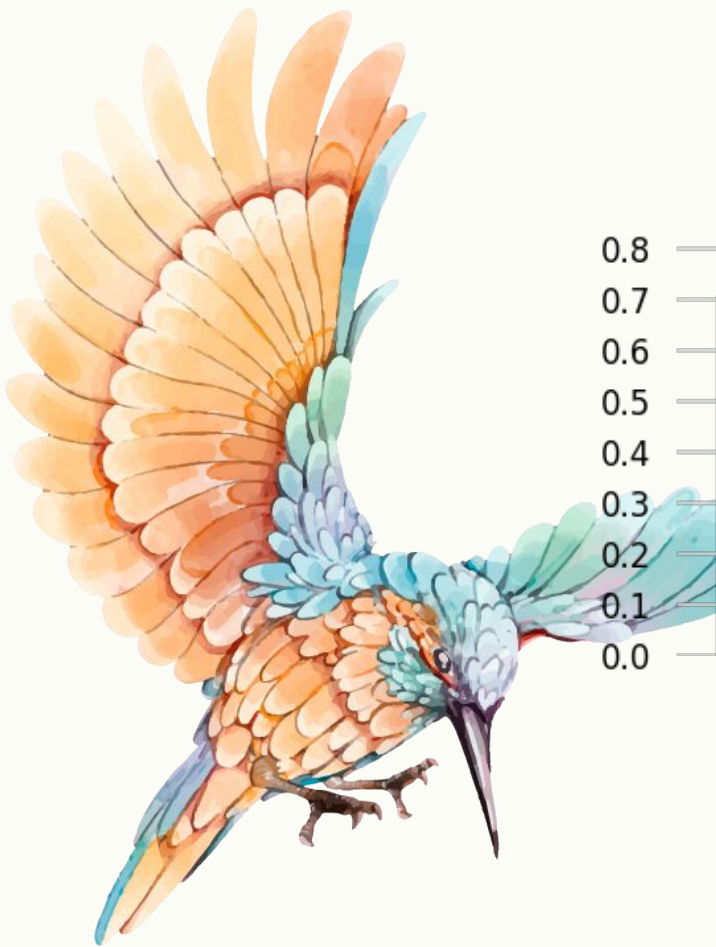- Pitch shifted and stretched

Modeling

31 Models
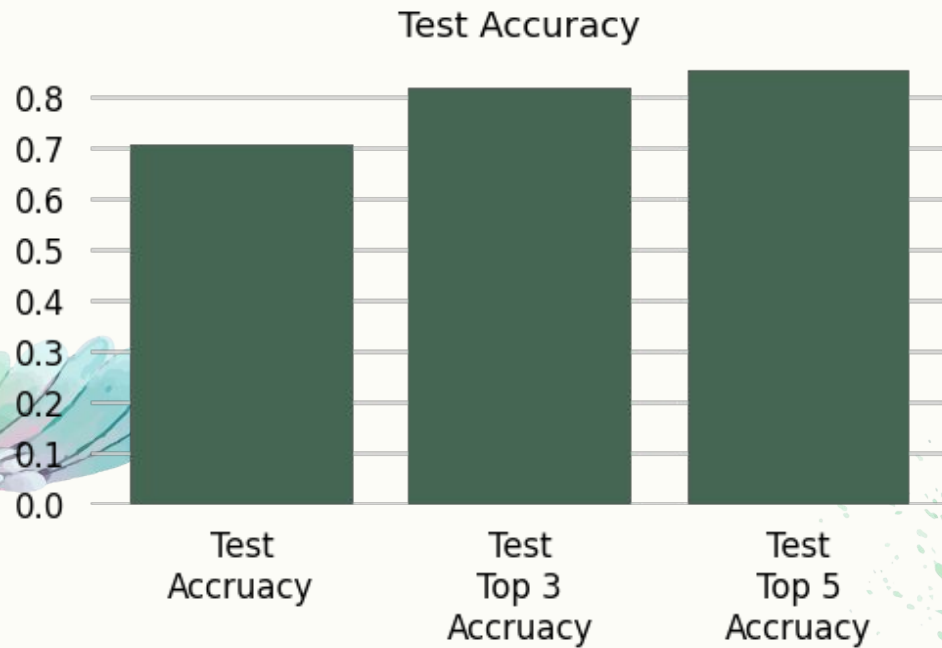
Azure Machine Learning cloud

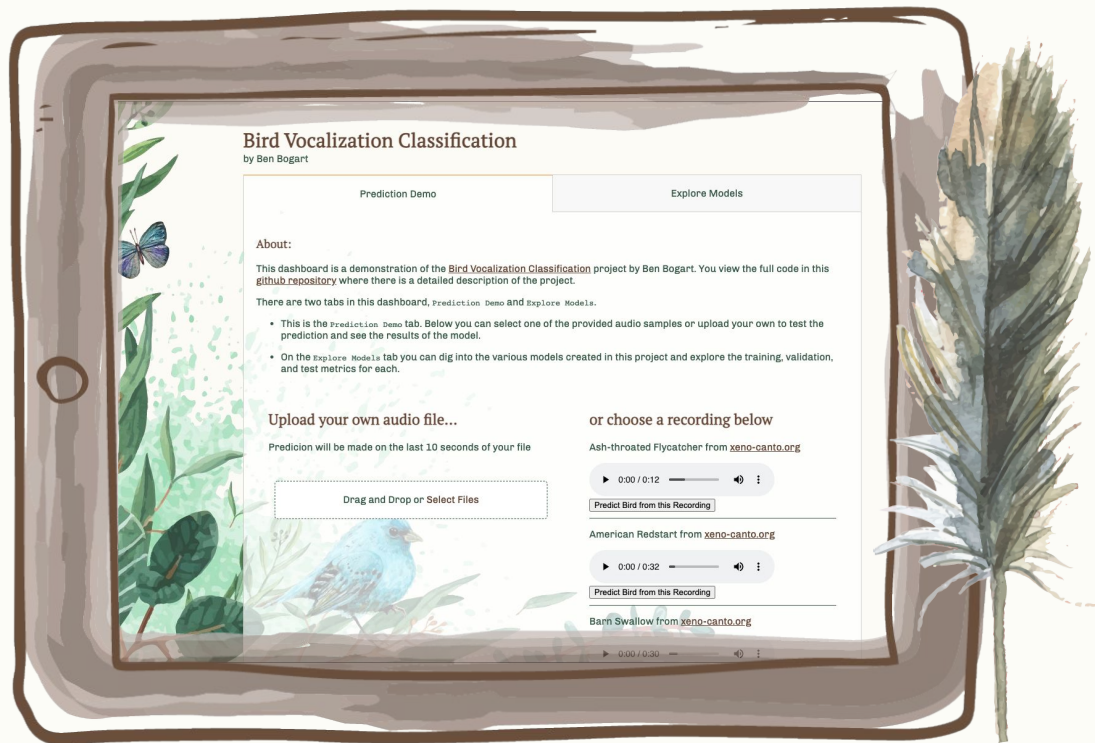Drawing 10 second random samples from audio

Performance

Test Accuracy

Deployment

Bird Vocalization Classification
by Ben Bogart

| Prediction Demo | Explore Models |

About:

This dashboard is a demonstration of the Bird Vocalization Classification project by Ben Bogart. You view the full code in this github repository where there is a detailed description of the project.

There are two tabs in this dashboard, Prediction Demo and Explore Models.

- This is the Prediction Demo tab. Below you can select one of the provided audio samples or upload your own to test the prediction and see the results of the model.

- On the Explore Models tab you can dig into the various models created in this project and explore the training, validation, and test metrics for each.

Upload your own audio file...

Predicion will be made on the last 10 seconds of your file

Drag and Drop or Select Files

or choose a recording below

Ash-throated Flycatcher from xeno-canto.org

▶ 0:00 / 0:12   🔊 ⋮

Predict Bird from this Recording

American Redstart from xeno-canto.org

▶ 0:00 / 0:32   🔊 ⋮

Predict Bird from this Recording

Barn Swallow from xeno-canto.org

▶ 0:00 / 0:30   🔊

Upload recording

Pre-recorded samples

Detailed model statistics

Future Work

Develop Mobile App

Create Sound Event Detection model

Test other model architectures including time based, and attention based.

Thank You

Dashboard:

http://bird-vocalization.heroku.com/

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