

Moth Classifier: Impacts and Goals

...

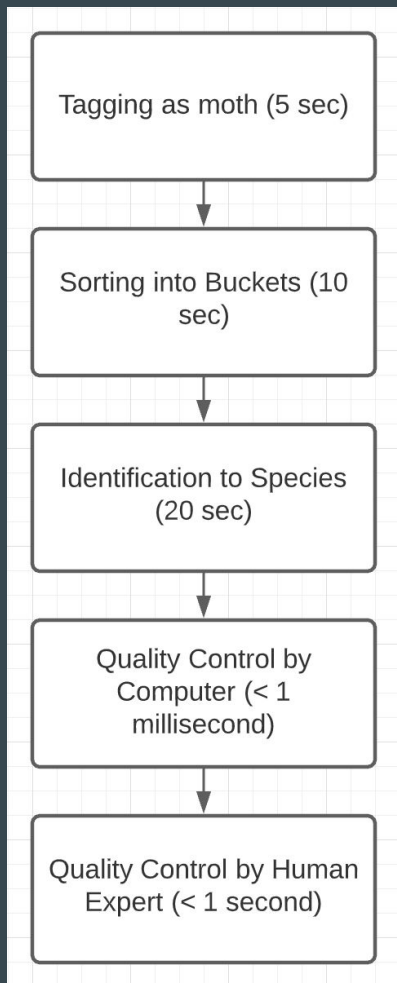
Abid Ahmed, Ben Giangrasso, Reese Jones

Current Problems

Discover Life Process:

35 seconds per image!!!

Experts must confirm species

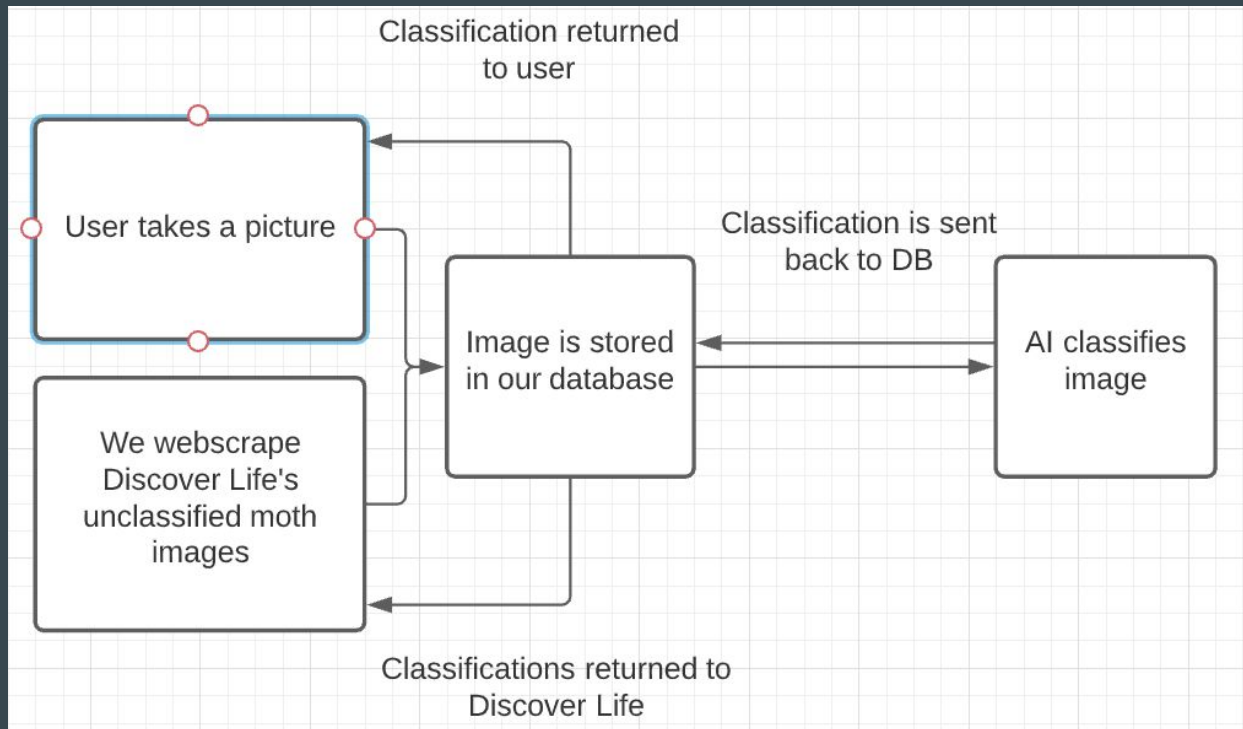


Our Solution

Our Process:

Images can be classified
within a few seconds

Human effort is not
required



Implementation Goals

Efficient Web Scraping

9% | 906/10000 [01:20<13:00, 11.65it/s]

Discover Life Images



Our Dataset

'Actias luna'	'Clydonopteron sacculana'	'Ectropis crepuscularia'
'Amyna bullula'	'Costaconvexa centrostrigaria'	'Epimecis hortaria'
'Anicla infecta'	'Dasychira tephra'	'Eucosma robinsonana'
'Antheraea polyphemus'	'Diaphania nitidalis'	'Eulithis diversilineata--gracilineata'
'Apatelodes torrefacta'	'Disclisioprocta stellata'	'Eutrapela clemataria'
'Arta olivialis'	'Dolichomia binodulalis'	'Givira francesca'
'Arta statialis'	'Dolichomia olinalis'	
'Atteva aurea'	'Drepana arcuata'	'Heterocampa obliqua'
'Cisthene packardii'	'Dryocampa rubicunda'	'Hypagyrtis esther--unipunctata'
'Cisthene plumbea'	'Dyspteris abortivaria'	'Hypena scabra'
'Clemensia albata'	'Eacles imperialis'	'Hypoprepia fucosa'
		'Idaea tecturata'
		'Idia americanis'
		'Ilectra intractata'
		'Inga sparsiciliella'
		'Iridopsis defectaria'
		'Iridopsis larvaria'
		'Isochaetes beutenmuelleri'
		'Lactura pupula'
		'Lascoria ambigua'
		'Leucanopsis longa'
		'Lochmaeus bilineata'
		'Loxostegopsis merrickalis'
		'Marimatha nigrofimbria'
		'Melanolophia canadaria--signataria'
		'Microcrambus elegans'
		'Microcrambus minor'
		'Monopis pavlovski'
		'Nadata gibbosa'
		'Nemoria satyria'
		'Nigetia formosalis'
		'Oneta rosea'
		'Oruze albocostalis'
		'Palthis angulalis'
		'Palthis asopialis'
		'Pangrapta decoralis'
		'Papilio glaucus'
		'Patalene olyzonaria'
		'Phlogophora periculosa'
		'Polygrammate hebraicum'
		'Prochoerodes lineola'
		'Protobarnia porcellaria'
		'Rivula propinqualis'
		'Symmerista albifrons'
		unknown

Implementation Goals

Classification through Machine Learning

Example:



```
Class: sunflowers, 99.58 percent confidence.  
Class: daisy, 100.00 percent confidence.
```


Front-End Interface

Old Solution:

Submission and Classification

back | **Reset** | **submit**

Check boxes to copy values to

 **last**

template
I_JPA799

☐ Dolichomia olinalis, Yellow-fringed Dolichomia Moth

☐ John Pickering pick@discoverlife.org 2020-09-20

☐ -1

Size [80](#) [120](#) [240](#) [320](#) [640](#) | [Map](#) | [List all](#) | [Albums](#) | [Discover Life](#)

- Set id as template
- Add id to selected
- Send feedback

I_JPA790

Inga sparsiciliella, Black-marked Inga Moth

John Pickering pick@discoverlife.org 2020-09-2

-1

DSC_4706

United States
Georgia
Clarke
Athens
275 Blue Heron Drive
33 8882
-83.2973
2020 08 23 06:24:11

your first & last name

email

password

submit

id

title [222](#) [Inga sparsiciliella](#)
[images](#) [map](#) [photology](#)

host/prey

determined by who-email-yyyyymmdd

[_grade](#) [222](#)

notes

caption

[_private_slide](#)

same specimen as id

[_orientation](#)

[label_URL](#)

photographer

email

[how/method](#) [details](#)

name;

size mm

morph;

sex;

view

common name;

country

state/province

county

city/place/location

street/site/trail

position/trap

latitude

longitude

date1 yyyyymmdd


date2 yyyyymmdd

collector

[more_views_URL](#)

[links_URL](#)

keywords



I_JPA790
width=240 x height=160 pixels; size=3504 bytes

[Photo details & zoom in](#)
[Photo image only](#)

submit

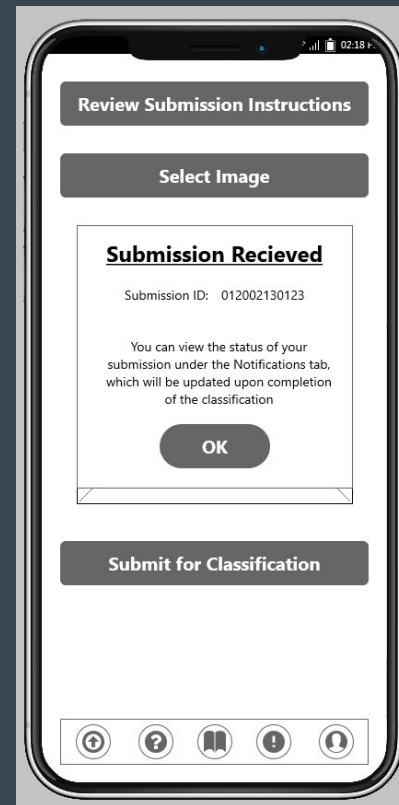
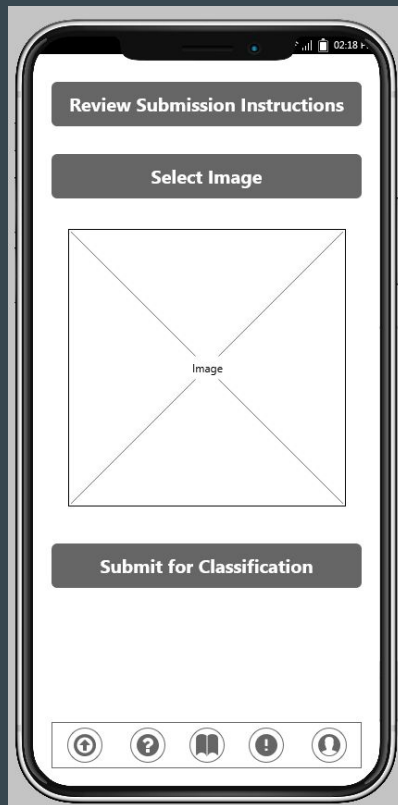
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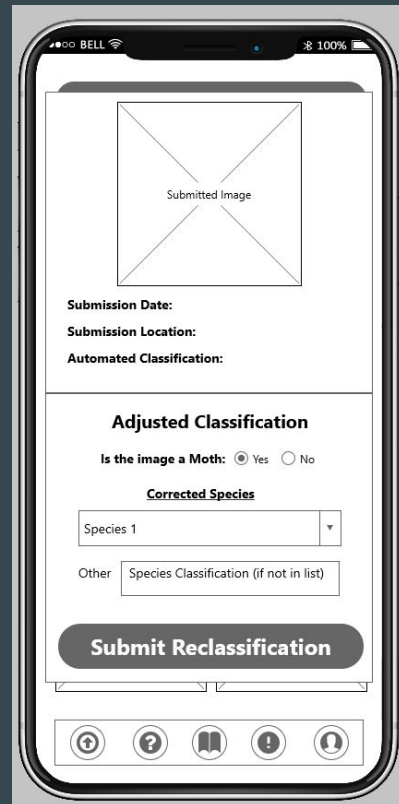
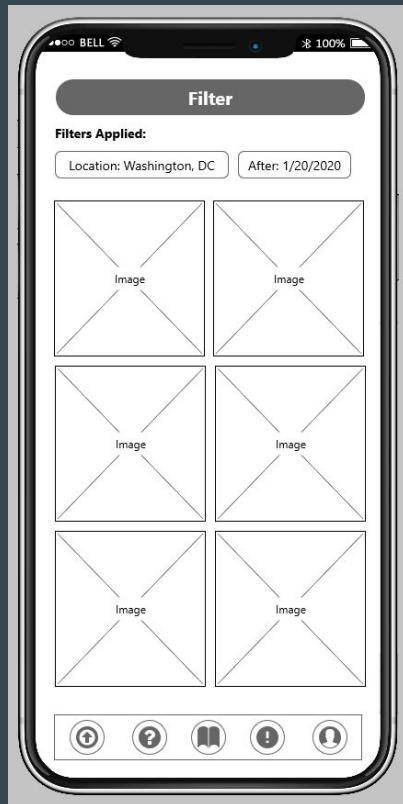
Front-End Interface

New Solution:
Submission



Front-End Interface

New Solution:
Classification



Front-End Interface

Benefits of Mobile Architecture:

SCALABILITY

**HARDWARE
INDEPENDENT**

PERFORMANT

Project Summary

Overview

**MOBILE
APPLICATION**

REST API

**MACHINE
LEARNING
MODELS**

Project Roles

