MothClassifier Presentation 4

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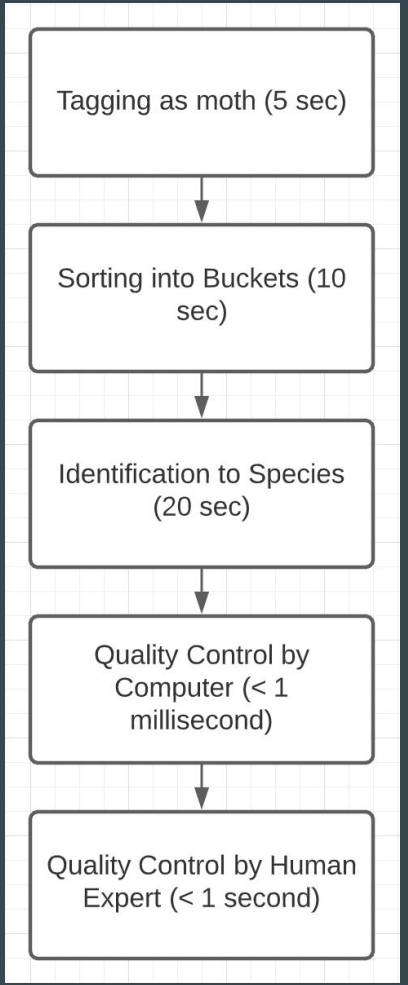
About Us

- Goal: Replace human labor with AI
- Manual species classification is slow and labor intensive
- How? Mobile Application and Machine Learning

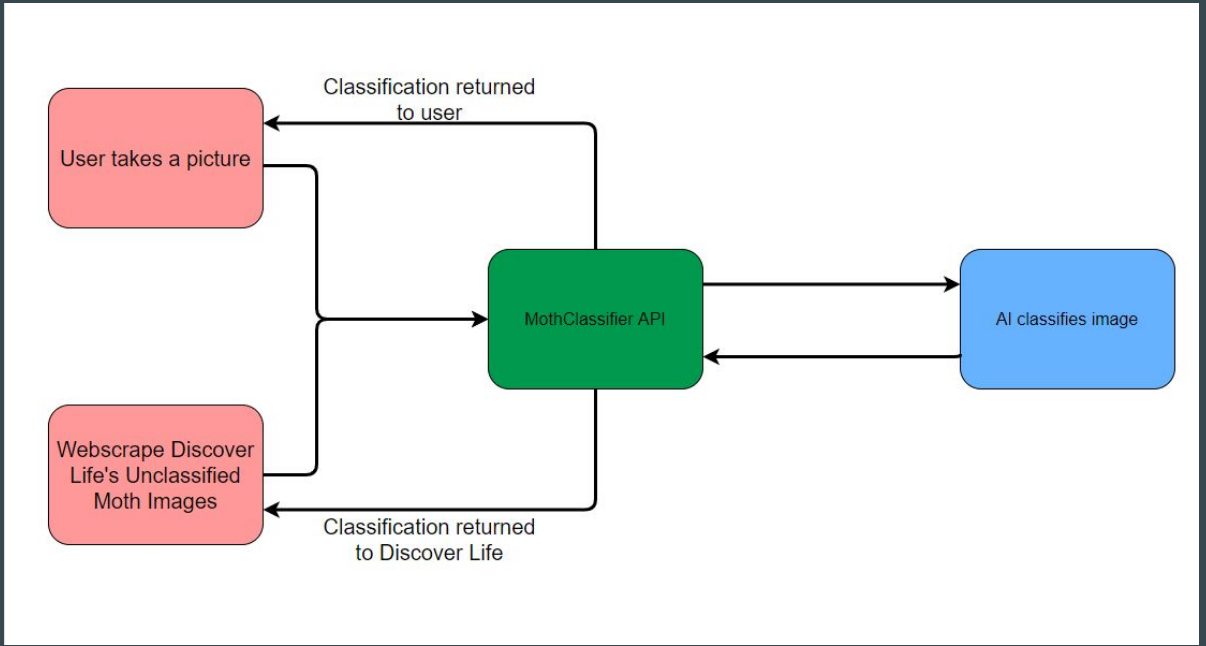


Reese Jones

About Us

- Free up researcher time and improve productivity

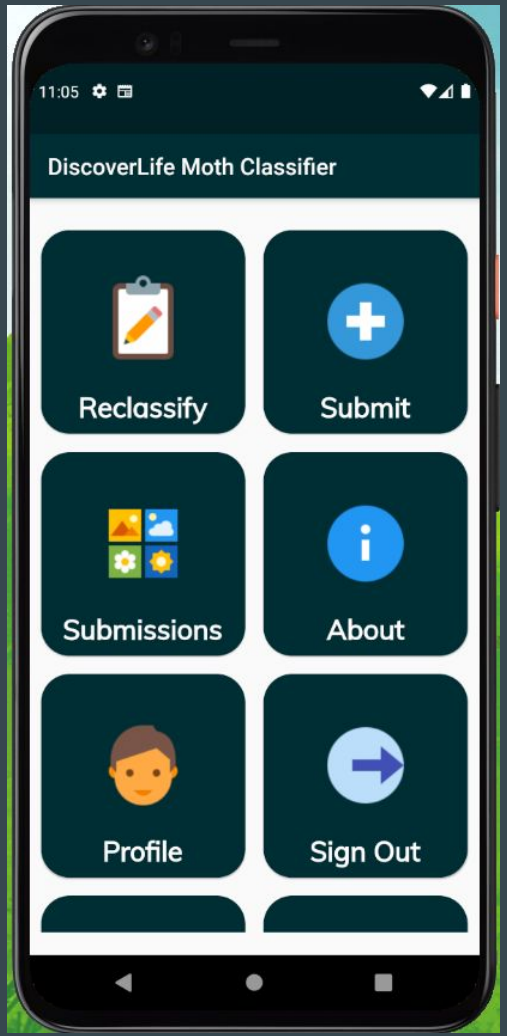
- Further Moth Research



Abid Ahmed

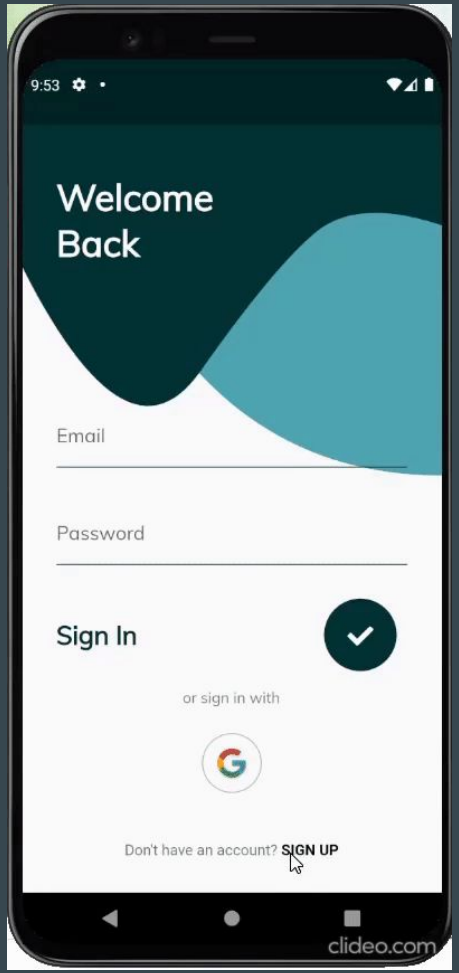
Demo: Goals

- Ease of Access and Usability
- Convenient System that is performant
- Tailored to the needs of the Discover Life project



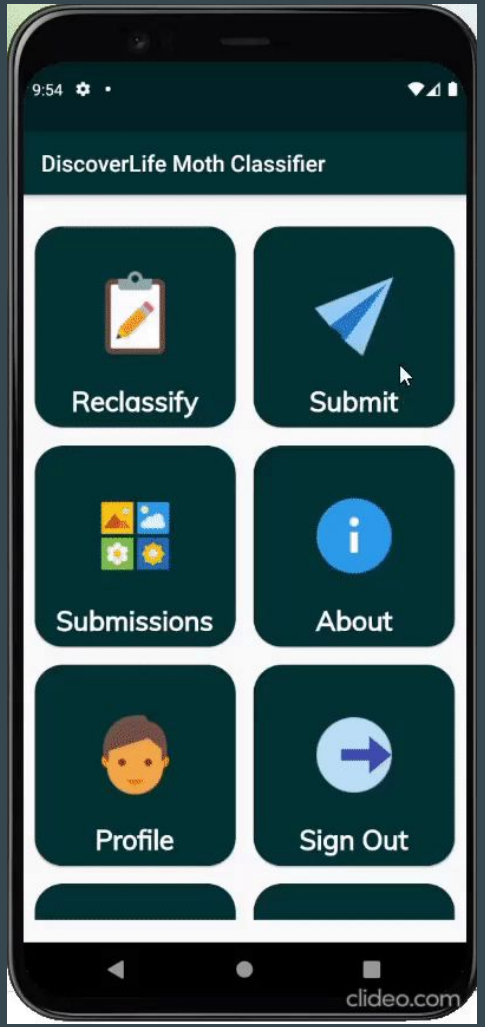
Demo: Authentication

- Utilize Firebase Authentication to allow 3rd party login
- Account information secured by our API
- Smooth and Modern Look



Demo: Image Submission

- Can submit from local storage or the cloud
- Simple, no nonsense submissions interface



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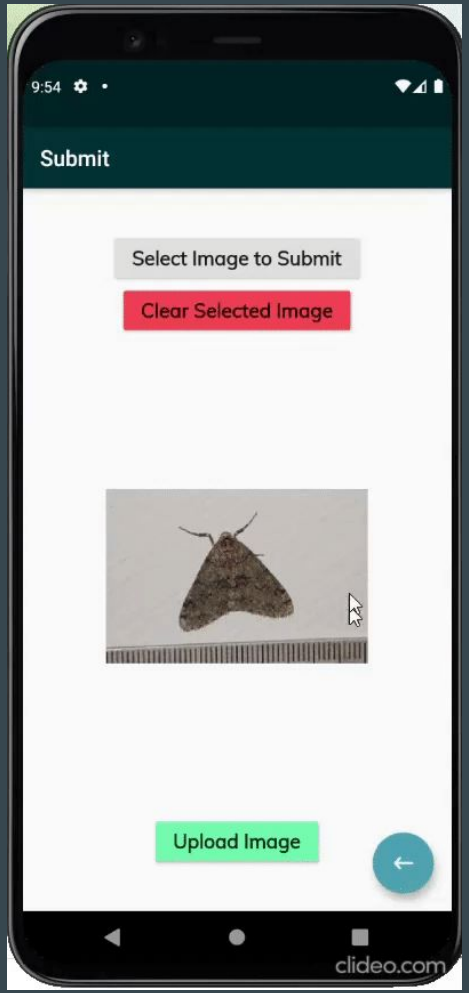
Demo: Notifications

- API triggers Firebase notifications based on ML output
- Responsive, fast notifications

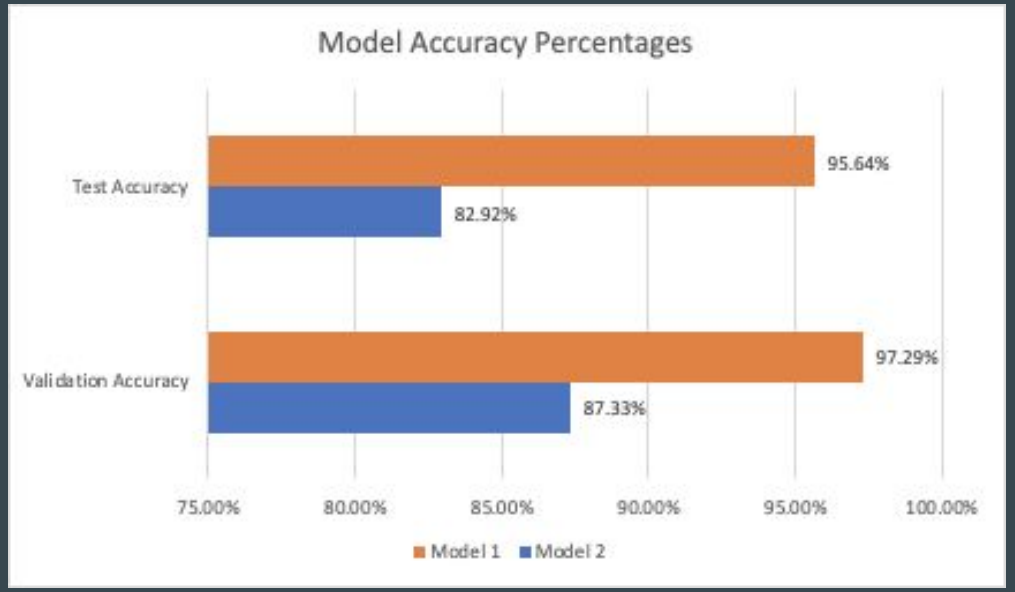


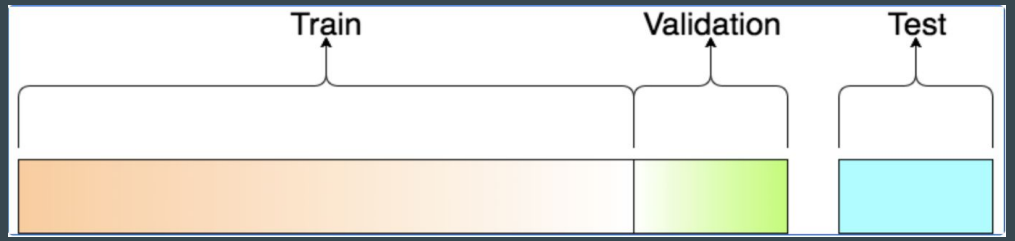
Main Algorithm

- Image classification through machine learning
  - Python and Tensorflow
- Web scraped images from Discover Life website
- Trained to classify images as a specific species or “miscellaneous”
- Models are trained on the Cerberus Cluster

Machine Learning Data

- Dataset size
  - 61247 pictures
  - 1025 species
- Model 1
  - 5 most-populated species
  - 15% of total dataset
- Model 2
  - 50 most-populated species
  - 50% of total dataset



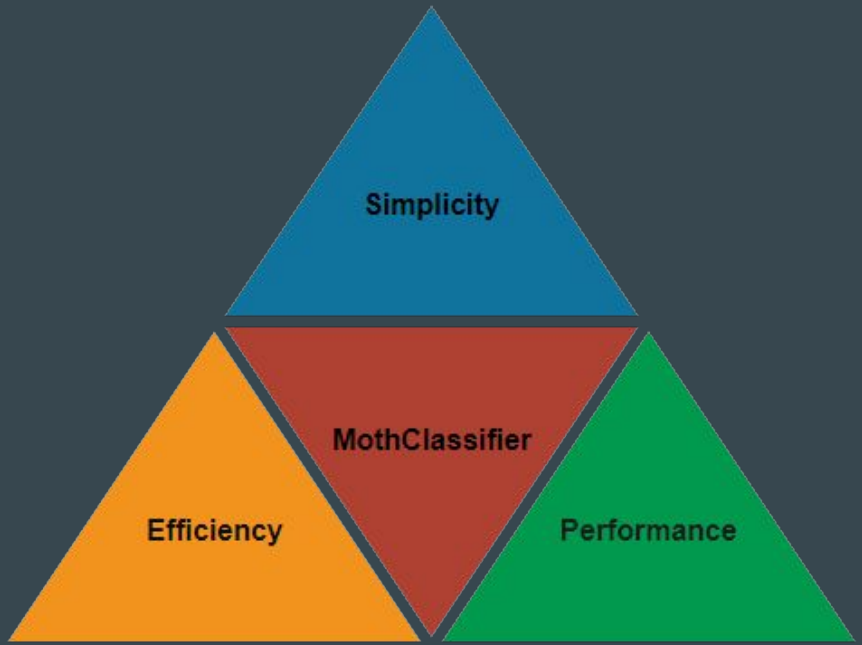


Ben Giangrasso

Conclusion

- Automation and ease of use will improve productivity

- Furthering moth research



Questions?