Moth Classifier: Technical Overview

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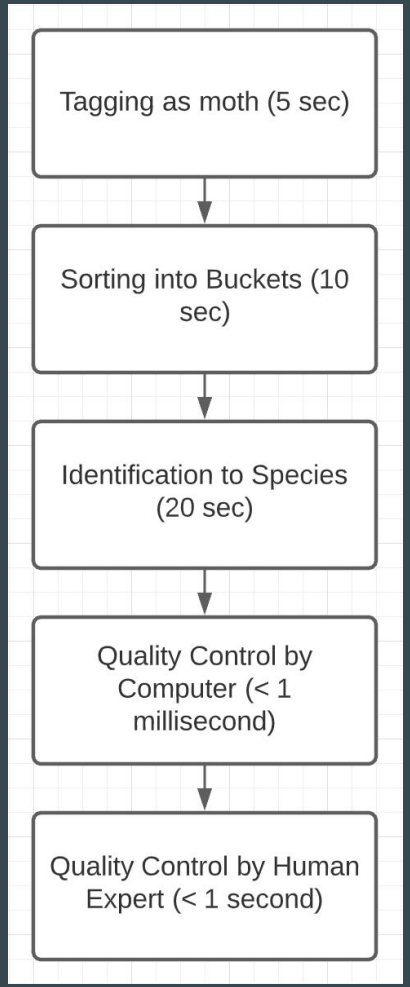
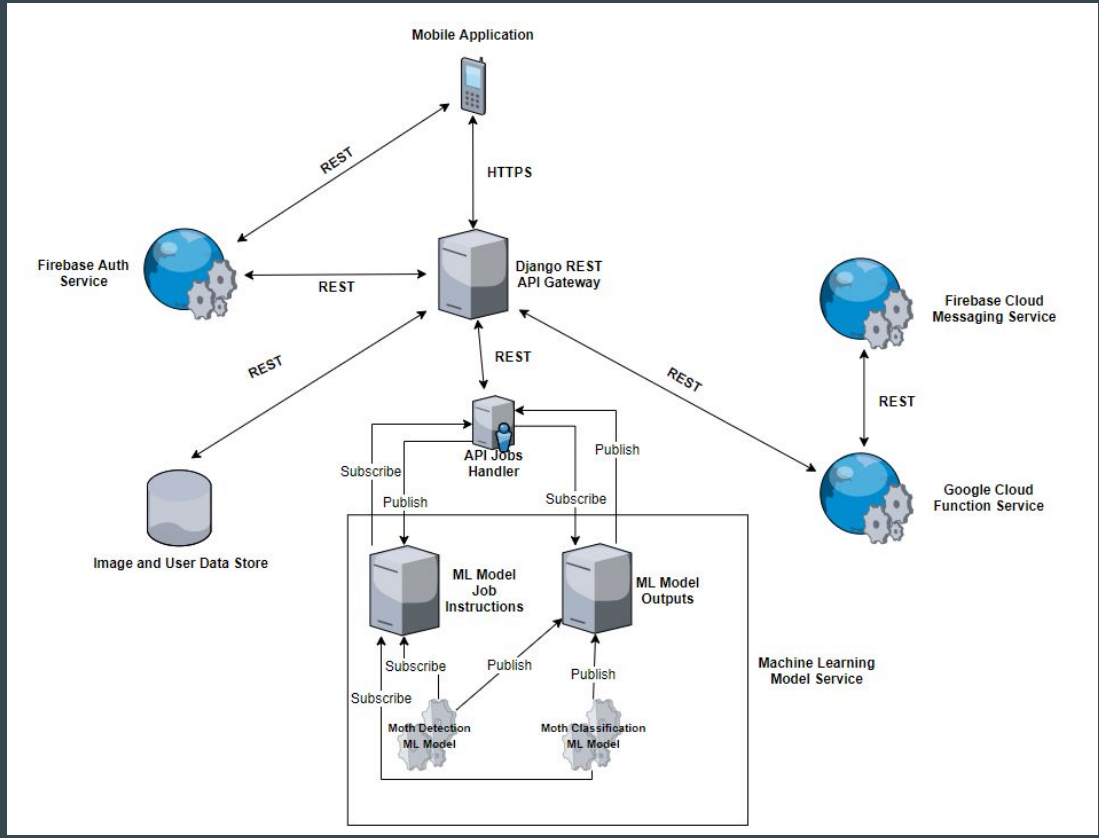
Project Overview: Objectives

- Automated classification system for moths
- Simplify the process
- Collect more data



Project Overview: System Structure

- Three Major Components
- RESTful API Acts as the communication gateway
- External services fill in “gaps” in our implementation

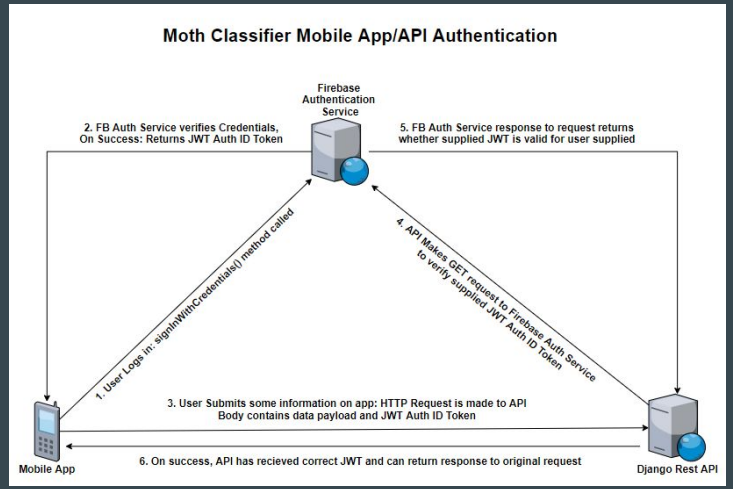


Major System Components: RESTful API

- REST API broken into different endpoints

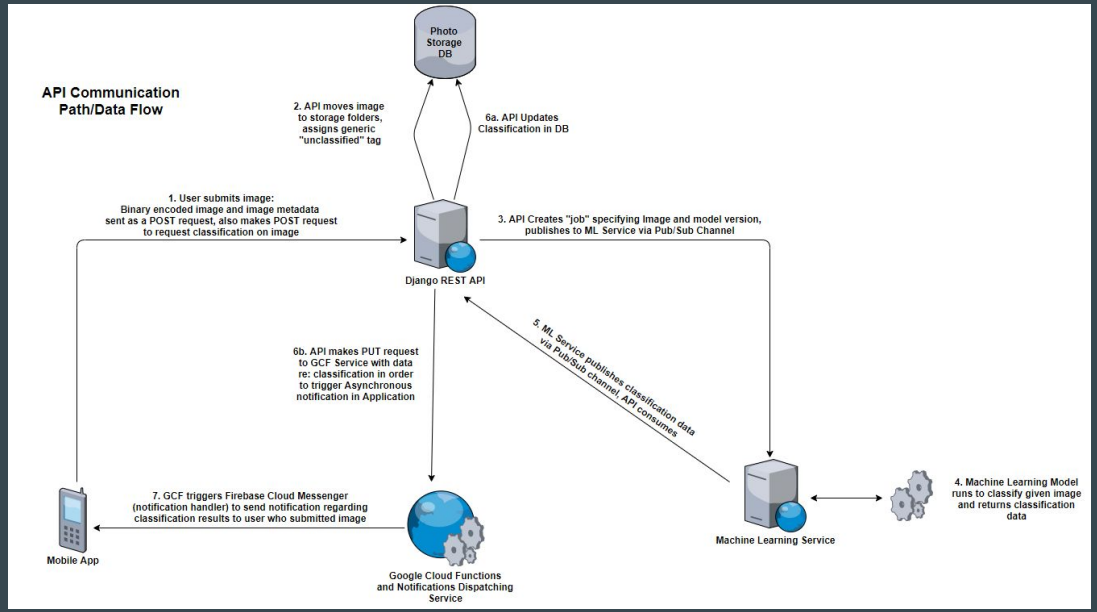

```
"users": "http://167.172.31.118:8000/api/v1/users/",
"images": "http://167.172.31.118:8000/api/v1/images/",
"jobs": "http://167.172.31.118:8000/api/v1/jobs/",
"classifications": "http://167.172.31.118:8000/api/v1/classifications/",
"models": "http://167.172.31.118:8000/api/v1/models/"
```


- Authentication with Firebase



Major System Components: RESTful API

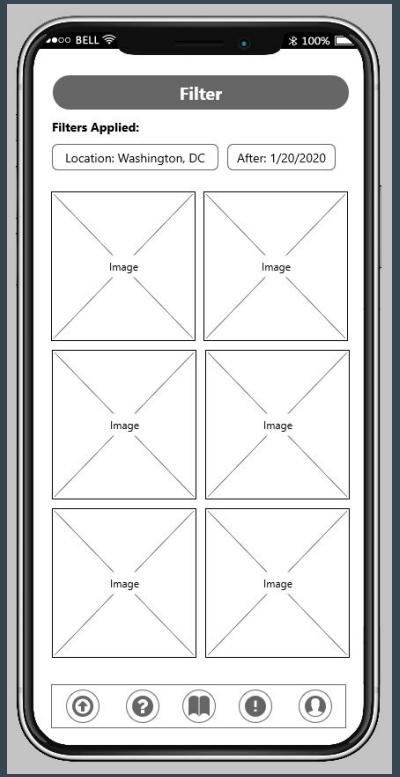
- Asynchronous Notifications with Google Cloud Platform
- Asynchronous Communication with Machine Learning Service
  - Redis message broker
  - Celery task queue

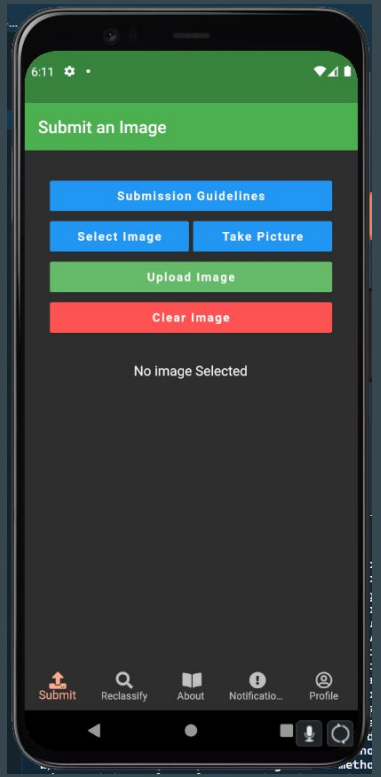


Abid Ahmed

Major System Components: Mobile Application

- Major Features
  - Submit Images for Classification
  - Review Previous Classifications
  - Update Improper Classifications

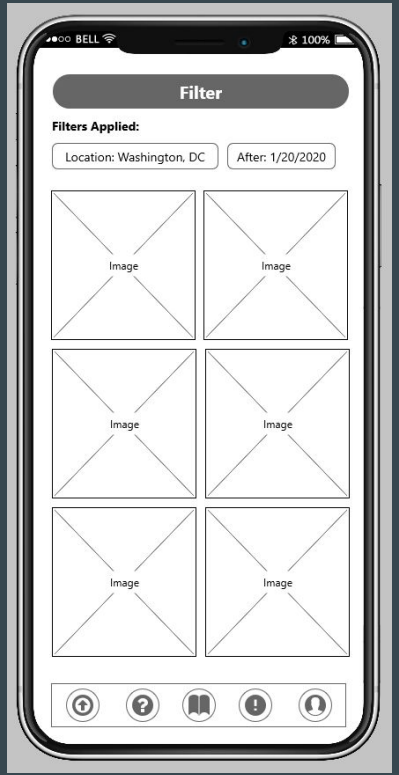


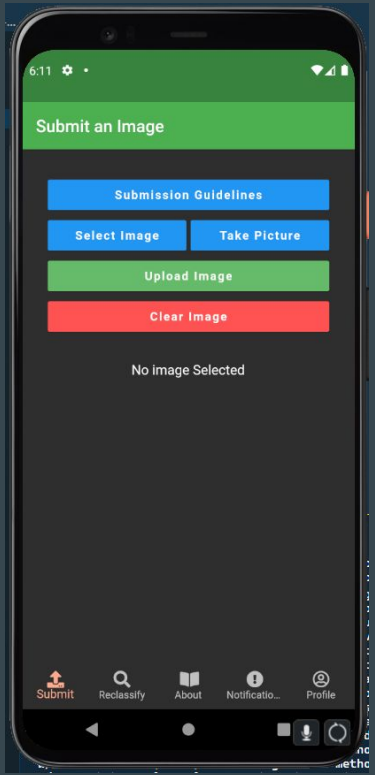


Reese Jones

Major System Components: Mobile Application

- Application Architecture
  - Using Data Providers for performance
  - Using Futures for Efficient Load Time
  - Flutter for Cross Platform Development

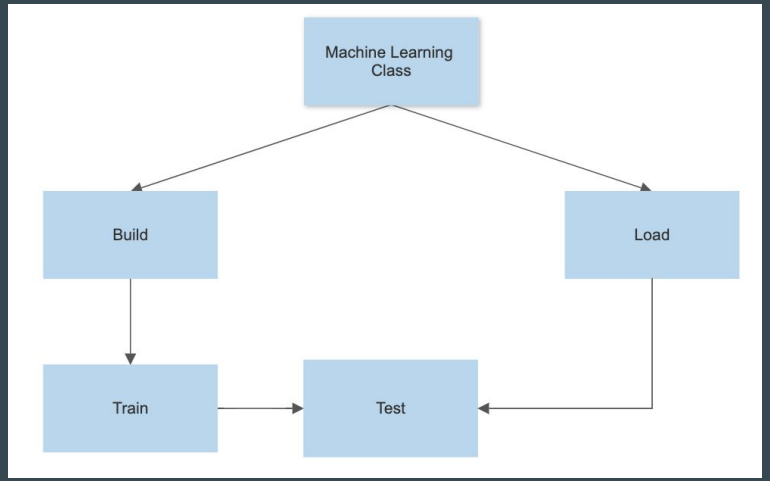




Reese Jones

Major System Components: Machine Learning Algorithms

- End Goal
  - Successful classification of moth species commonly populated in dataset
  - High confidence rating (>80%) for all images classified
- Key Components
- Why this algorithm?
  - Adaptable
  - Scalable
  - Inexpensive classification



Questions?