

# TRAVEL TRAILS



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## TRAVEL TRAILS

An app to collect virtual models of the places you've visited by taking photos and contributing to crowdsourced 3D models.



## WHY USE OUR APP

1

perspective

2

NOSTALGIC

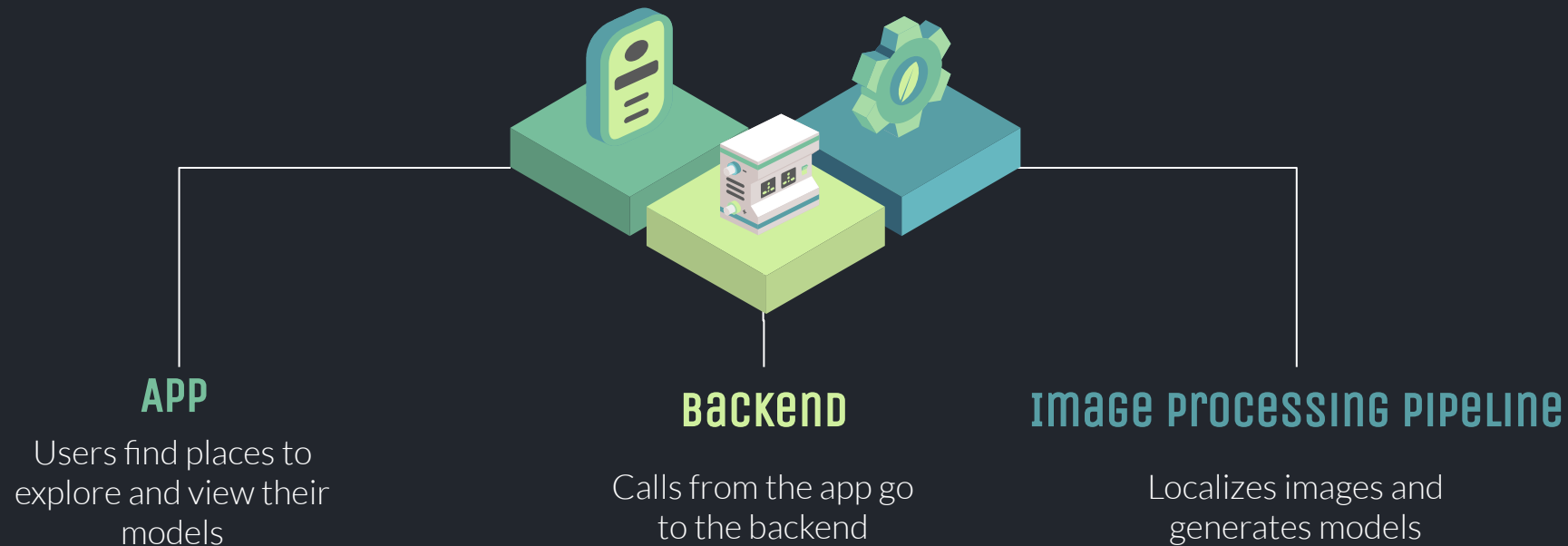
3

social

4

INCENTIVIZING

# SYSTEM ARCHITECTURE

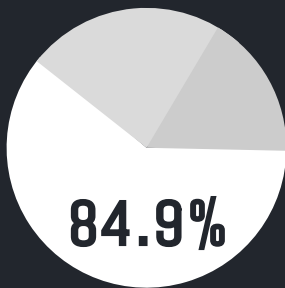


## OUR APP



## APIS & TOOLS

### Android Marshmallow 6.0



2.5 billion active  
worldwide Android users

### GOOGLE MAPS



Display available models

### camera



Capture and send images  
to the server

### scene viewer



An immersive viewer that  
enables 3D experiences

### OKHTTP CLIENT



Fetch model information

## 3D RECONSTRUCTION LIBRARIES:

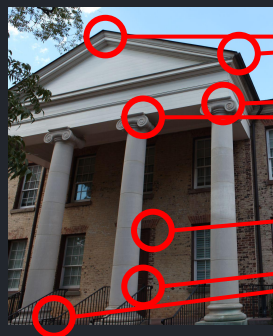
COLMAP  
OPENSFM  
BUNDLER

## IMAGE PROCESSING PIPELINE



*FAST IMAGE LOCALIZATION*

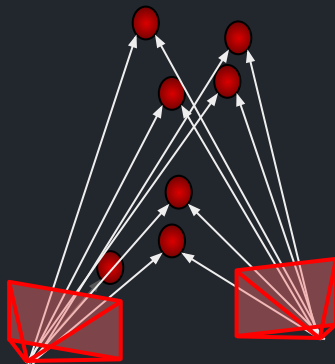
*PERIODIC UPDATES*



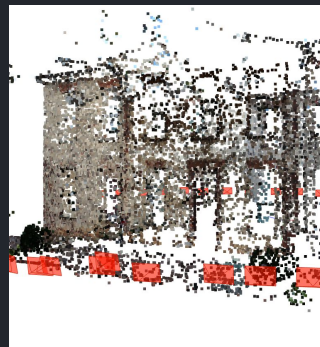
FEATURE  
EXTRACTION



FEATURE  
MATCHING



POSE  
ESTIMATION



SPARSE  
RECONSTRUCTION



DENSE  
RECONSTRUCTION

## BACKEND REST API

### POST /upload

upload a photo,  
return if successful

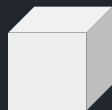
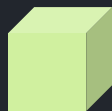
### GET /model

Get model from  
location id

### GET /nearby

Get possible  
locations to visit  
near you given GPS  
coordinates

ALPHA



FINAL



### GET /location

Get information about a  
location

### GET /leaderboards

Get the current  
point leaders

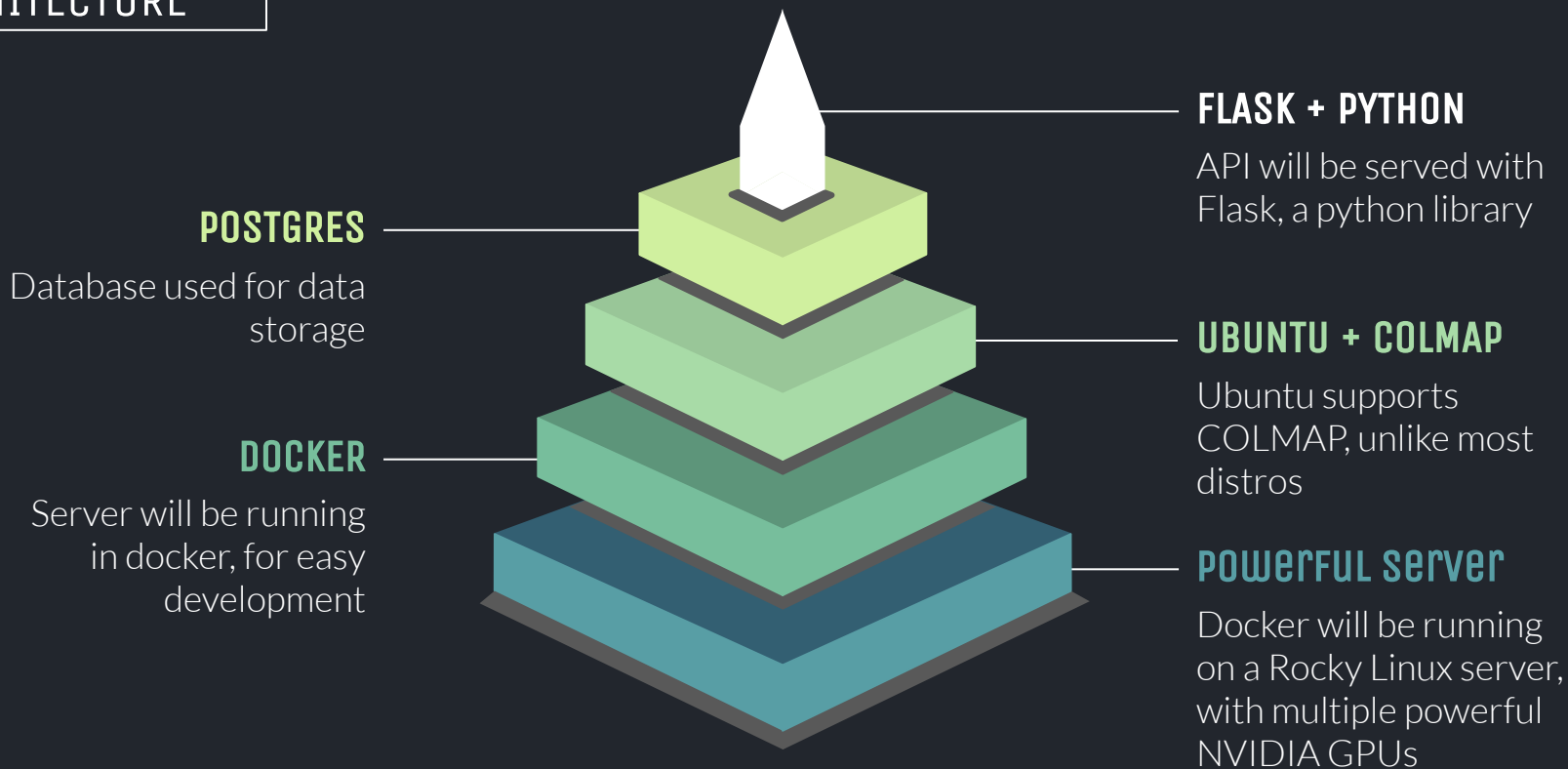
### GET /timeline

Get locations  
friends have been

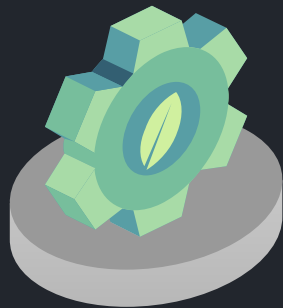




# BACKEND ARCHITECTURE

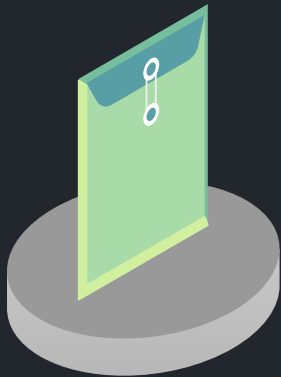


# CHALLENGES AND RISKS















MODEL  
COMPATIBILITY

COLMAP  
SUPPORT



FAST  
LOCALIZATION

## FEASIBILITY

	ALPHA	FINAL	STRETCH GOALS
Contribute photos to model			
Download + view model			
Friends + view where they've been			
Leaderboard			

THANKS FOR  
LISTENING!

Questions?

