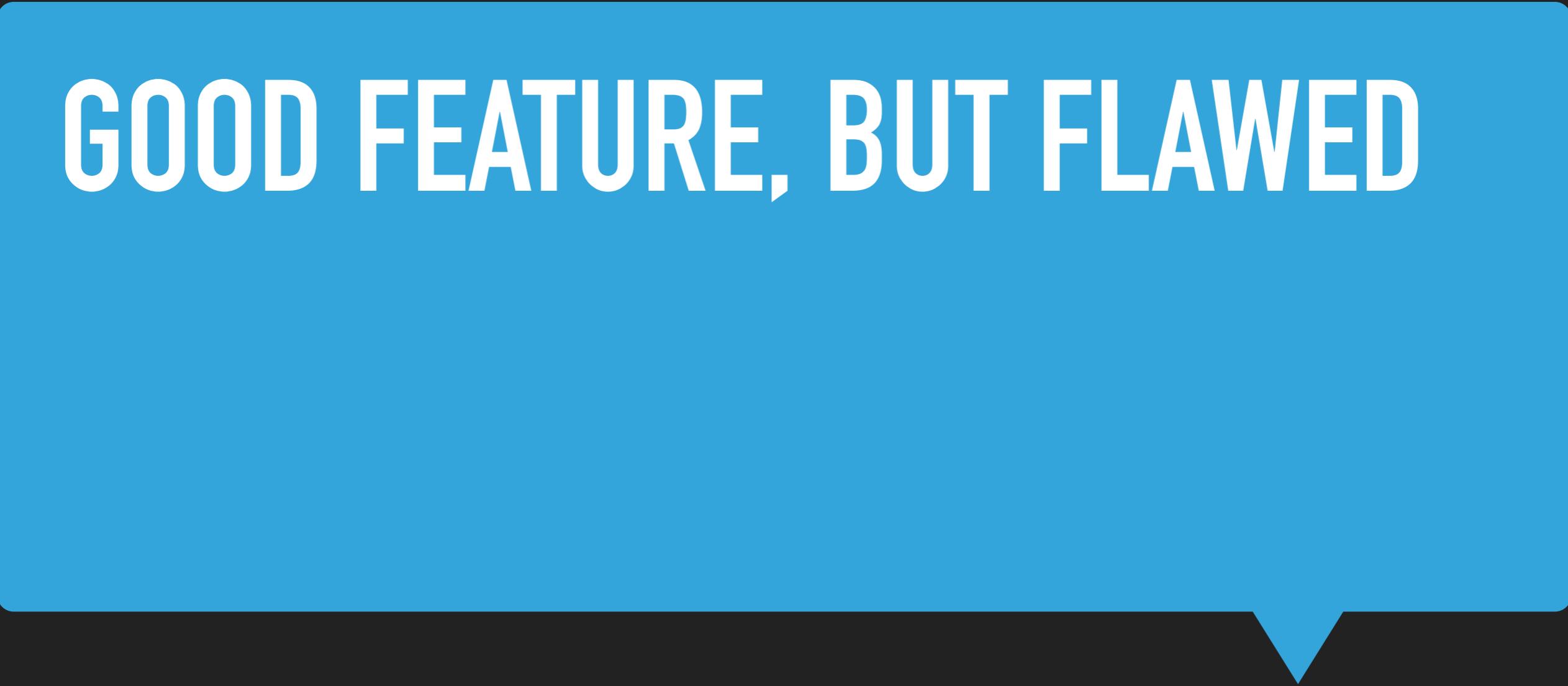

GOOD FEATURE, BUT FLAWED



Real User

I HAVE TROUBLE SEEING THE
LABELS



Real User

COLLECTING FEEDBACK

- ▶ Thousands of users
- ▶ New 'Enterprise' App
- ▶ 500+ feedbacks a week
- ▶ Small team to triage

DAVID HODGE :: UX + AGILE + DEVOPS

COLLECTING & CLASSIFYING USER FEEDBACK AT SCALE

Enterprise Apps



USER EMPATHY



Steven Universe by Rebecca Sugar

GOALS FOR COLLECTING FEEDBACK

- ▶ Users should be heard
- ▶ Should be simple to collect
- ▶ Should not interrupt their flow



RUN ONE THING



RUN MANY THINGS



RUN ANY THING

COMPARISON

- ▶ App Engine minimal ops for web applications
- ▶ Cloud Functions - simple APIs
- ▶ Cloud Run - containers, flexibility
- ▶ Scale to zero



DO ONE THING

CLOUD FUNCTIONS

- ▶ Simple event driven
- ▶ Not Much Ops
- ▶ Pay for what you use
- ▶ Ergonomics
- ▶ Free Tier 2 million invocations & 1 million seconds compute time/month

ONE JOB

- ▶ Save user feedback
- ▶ Cloud Function HTTP/Events + Firestore
- ▶ CI/CD Cloud Build
- ▶ Cloud Firestore - Documents -> Collections;
 - ▶ Flexible Collect more info: browser, user, geo, etc.

LET'S GO TO THE TAPE



Awesome. Wow.

AUTO ML - TEXT CLASSIFICATION

- ▶ Collect
- ▶ Classify
- ▶ Train
- ▶ Evaluate
- ▶ Predict
- ▶ Iterate

AUTO ML - COLLECT DATA - EXPORT FIREBASE DATA TO CLOUD STORAGE

```
gcloud beta firestore export gs://feedback-exports --collection-ids=feedbacks
Waiting for [projects/lucid-universal-services/databases/(default)/operations/
ASAzMDAwMDA5NzIJGnRsdWFmZWQHEjRlLXN1LXNib2otbmltZGEQCigS
] to finish...done.
metadata:
  '@type': type.googleapis.com/google.firestore.admin.v1beta1.ExportDocumentsMetadata
collectionIds:
  - feedbacks
operationState: PROCESSING
outputUriPrefix: gs://feedback-exports/2019-06-07T19:54:32_60520
startTime: '2019-06-07T19:54:32.679805Z'
name: projects/lucid-universal-services/databases/(default)/operations/
ASAzMDAwMDA5NzIJGnRsdWFmZWQHEjRlLXN1LXNib2otbmltZGEQCigS
```

AUTO ML - COLLECT DATA - IMPORT DATA TO BIG QUERY

```
bq --location=US load --source_format=DATASTORE_BACKUP  
feedbacks.feedback_canweride_table1 \  
gs://feedback-exports/2019-06-07T19:54:32_60520/all_namespaces/kind_feedbacks/  
all_namespaces_kind_feedbacks.export_metadata  
  
Waiting on bqjob_r73fc5a62b52e6fc0_0000016b4cf0d723_1 ... (2s) Current status: DONE
```

CLASSIFY



AUTO ML - CLASSIFY - EXPORT CSV

A	na
aasfdasf	na
Add descriptions of the rides	feature
adf	na
adfdfsf	na
asdf	na
Barnstormer information is incorrect	feature
Button dropdown for parks is blank white square instead of an arrow	feature
Can we ride test	na
Can we sign up for notifications?	feature
Can't read the feedback button sometimes	feature
Color changes when I come back to the site or refresh, PLease FIX!!!!	feature
Color hard to see.	feature
Colors are terrible	feature
Colors sometimes do not show up	feature
Cool idea, can't wait to see more features!	kudos
Doesn't work IE6!!!!	feature
Doesn't work on my Palm Pilot!	feature
Dropdown for parks don't work	feature
Great start to the site, I would love to donate	kudos
Hard to tell the name of the ride and name of park	feature
Help!!!!	na
I don't like the name Can We Ride. What about ride.com?	feature
I love this game	kudos
I need height in the metric system like the rest of the world ;)	feature
I need more cowbell	feature
I want a recommendation when I like a ride like Amazon for other rides!	feature
I want to add rides like Wikipedia!!	feature
I want to know the wait times of each ride.	feature
I want to know what the best route in a park would be for rides i select!	feature
I want to see videos of each ride!!!!	feature
I would like to know if a ride is handicap accessible.	feature
I would like to save a list of my favorite rides and comments on each.	feature
INclude speed in kmh/mpm	feature
It would be great to have pictures of the rides	feature
More rides please	feature
Pictures can we have some pictures for each ride.	feature
Please include links to the Park website for rides for more info	feature
Seems like alot of wasted space.	feature
sf	na
Sorting should be the in descending order of height	feature
Sorting would be nice	kudos
Tessss	na
TEst	na
Test after lunch	na
Test I need more cowbell	feature
Test111	na
Testa	na

TRAIN



AUTO ML - TRAIN - IMPORT CSV AS NEW DATASET

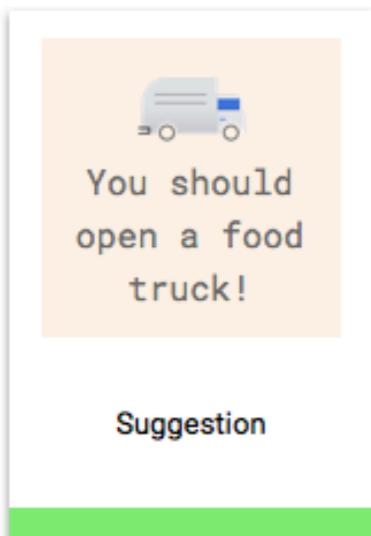
A photograph of a dirt path in a dense green forest. The path is surrounded by lush green vegetation and trees. It branches into two paths as it moves towards the center of the frame.

EVALUATE

EVALUATE

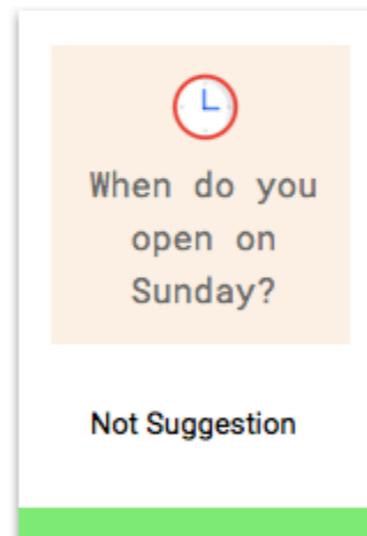
- ▶ Higher Precision Fewer **False Positives**
 - ▶ Incorrect Identification
- ▶ Higher Recall Fewer **False Negatives**
 - ▶ Should have been Identified
- ▶ PLEASE CHECK YOUR SPAM FOLDER

EVALUATE



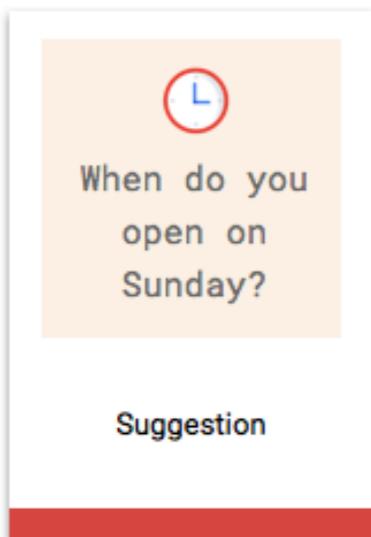
True Positive

The model correctly predicted 'Suggestion' for this text item



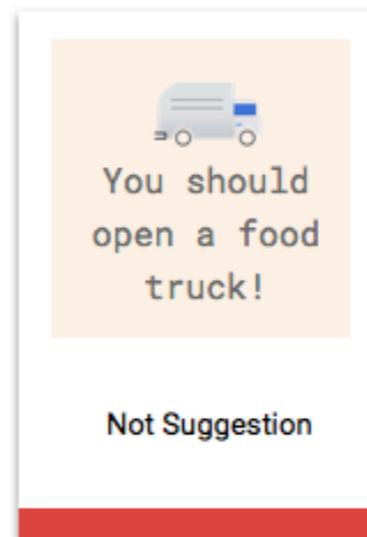
True Negative

The model correctly did not predict 'Suggestion' for this text item



False Positive

The model incorrectly predicted 'Suggestion' for this text item



False Negative

The model should have predicted 'Suggestion' for this item, but didn't

PREDICT



LET'S GO TO THE TAPE

NOW WHAT?

- ▶ Create Cloud Function to predict an incoming feedback
- ▶ Iterate Re-Classify
- ▶ Schedule/Automate processes
- ▶ Automate Actions - Alert when certain feedbacks signal downtime

WHY?

- ▶ Limited Human Resources
- ▶ We want to help our users



Indiana Jones and the Raiders of the Lost Ark

#SERVERLESSSUMMER

@DEVOPSDAYSDC
JULY 8-9

RESOURCES

- ▶ <https://cloud.google.com/functions/>
- ▶ <https://cloud.google.com/automl/>
- ▶ <https://cloud.google.com/firestore/>
- ▶ <https://cloud.google.com/storage/>
- ▶ <https://cloud.google.com/free/>
- ▶ <https://firebase.google.com/docs/firestore/manage-data/export-import>
- ▶ Twitter: @davezen1