



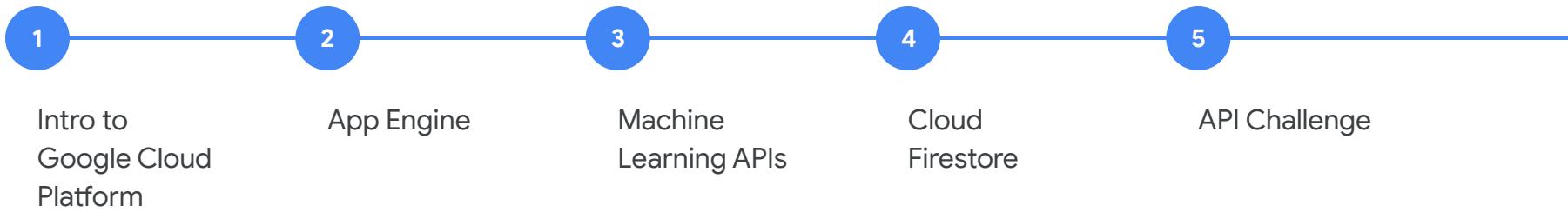
# Three Powerful Google Cloud Products for Your Project

Ryan Matsumoto, Tiff Wang, Amrit Kooner

nwHacks 2020

Google Cloud

# Agenda



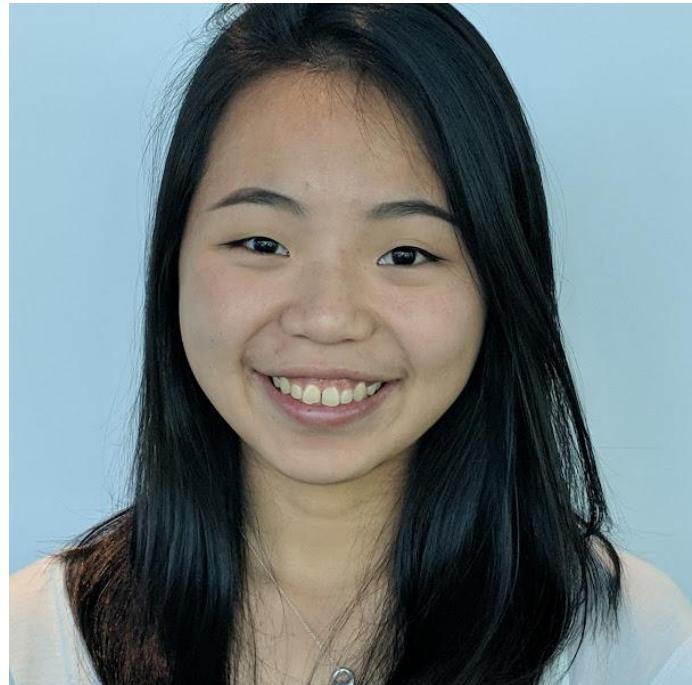
# About Me

- Ryan Matsumoto
- Developer Advocate at Google
- Office Location: San Francisco, CA
- Focused on Cloud for Education - Students & Faculty
- Stanford Class of 2016 (Computer Science & Economics)
- Hobbies & Interests: Elections, all of the Bachelor TV shows, Family Tree Research, Hackathons



# About Me

- Tiff Wang
- Software Engineer at Google
- Office Location: Seattle, WA
- Focused on Google Maps
- McGill Class of 2019 (Electrical Engineering)
- Hobbies & Interests: Netflix



# About Me

- Amrit Kooner
- Software Engineer at Google
- Office Location: Seattle, WA
- Focused on Google Maps
- UBC Class of 2019 (Computer Engineering)
- Hobbies & Interests: Soccer, Ultimate Frisbee



Me explaining  
cloud  
computing      Hackers



## Dictionary

cloud



# cloud

/klaʊd/

*noun*

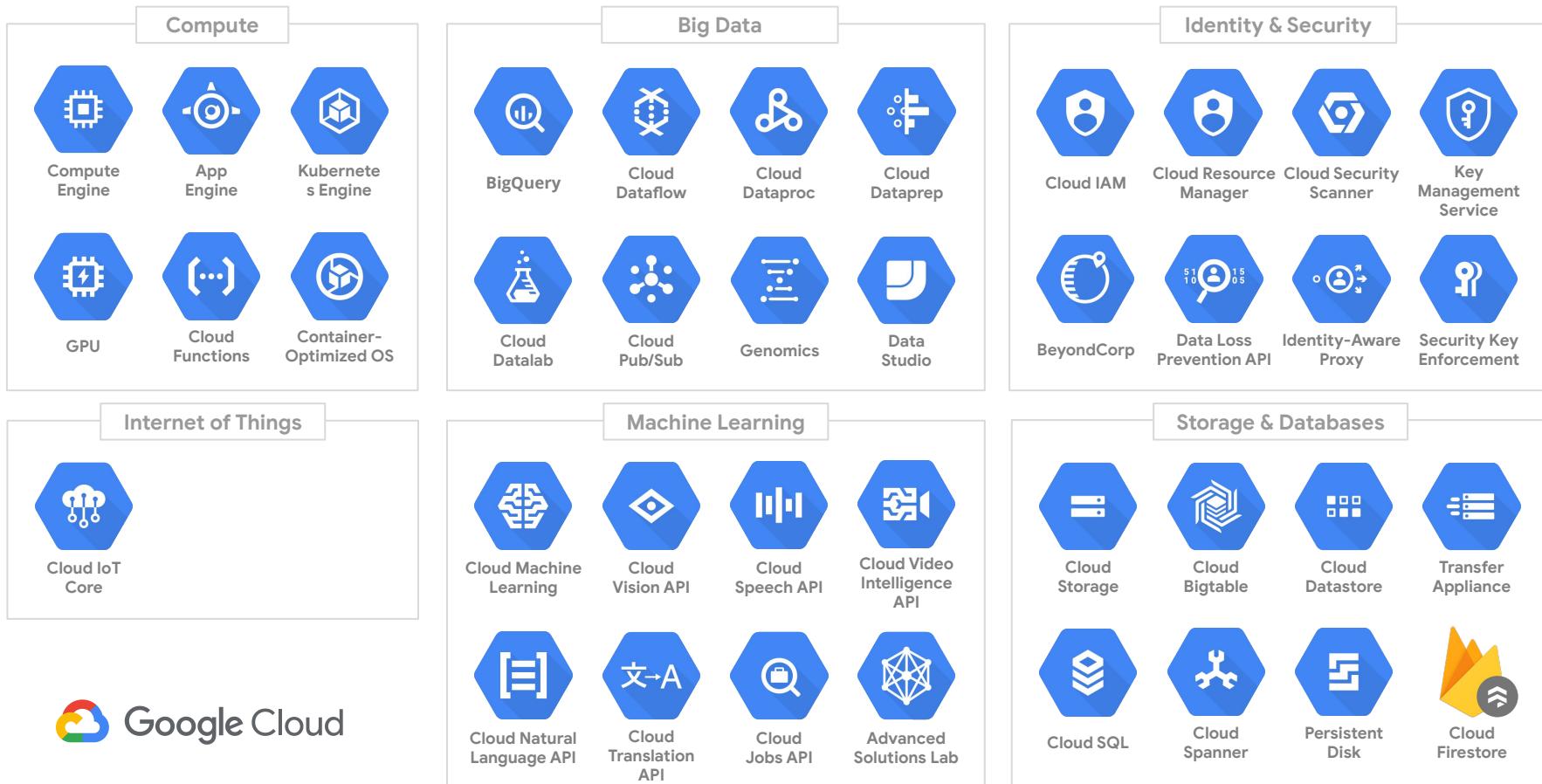
1. **Getting things done using someone else's computers**, especially where someone else worries about maintenance, provisioning, system administration, security, networking, failure recover, etc.

# What is Google Cloud Platform?

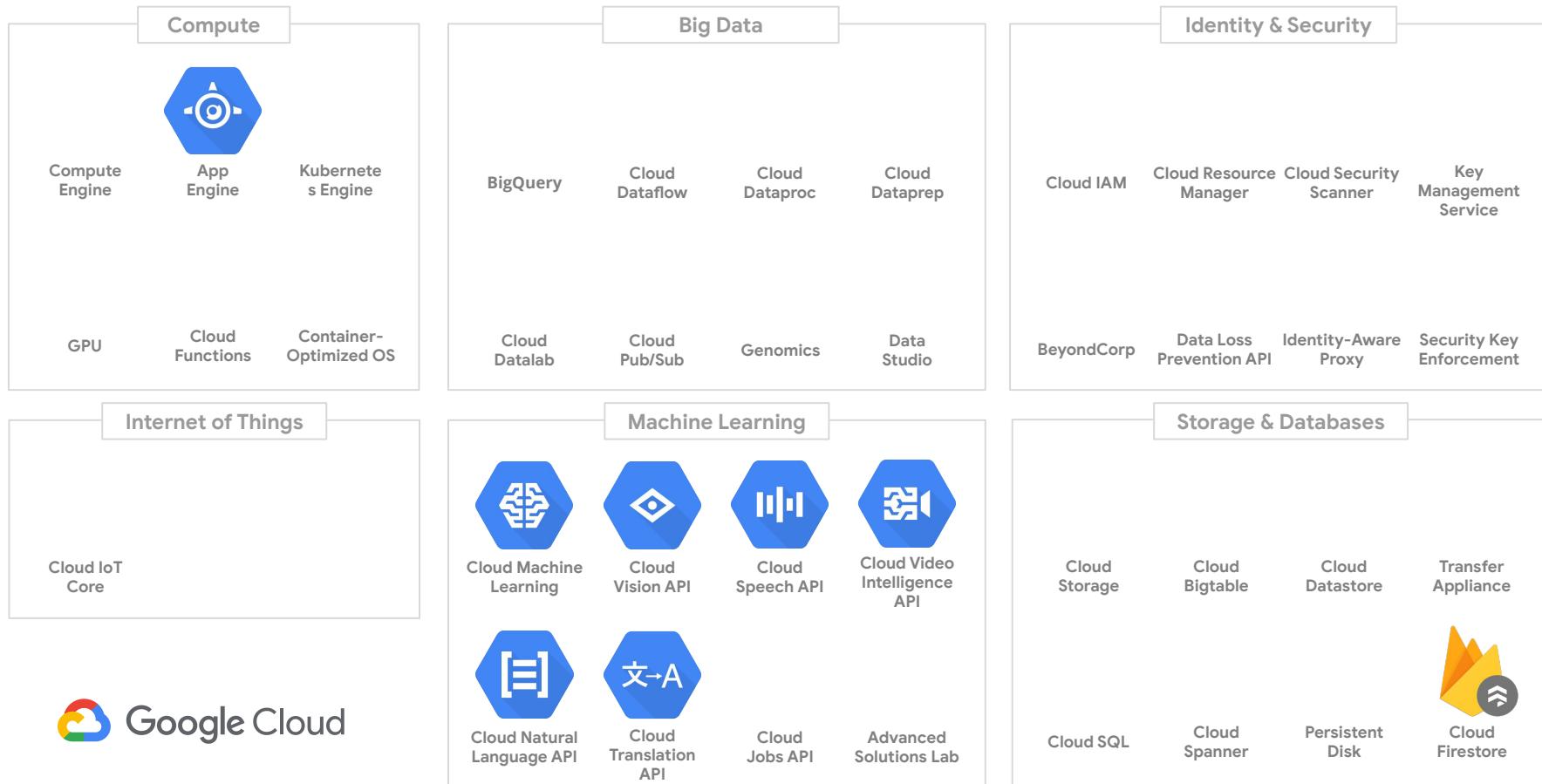
Google Cloud Platform lets you build and host applications and websites, store data, and analyze data, all on Google's highly scalable and reliable computing infrastructure.



# Google Cloud Platform Products



# Google Cloud Platform Products (tl;dr)



# App Engine

- **Deploy web apps** and mobile backends to the Cloud
- “Platform as a service” product
- Managed application platform that lets you focus on your code
- Autoscaling, load balancing, traffic splitting for A/B testing, error reporting, and more!



# App Engine Demo

[Python Flask App Tutorial](#)



# Machine Learning on Google Cloud





Puppy  
or  
Muffin?



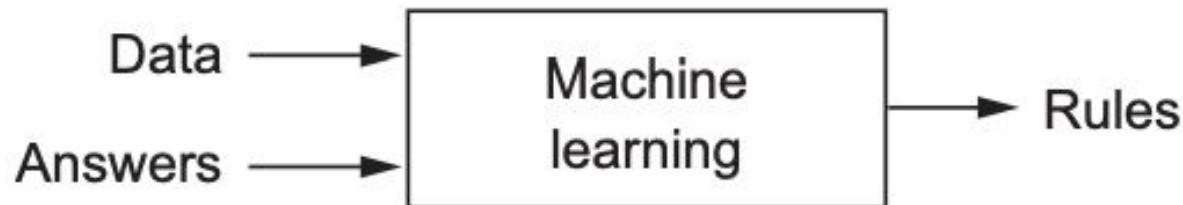
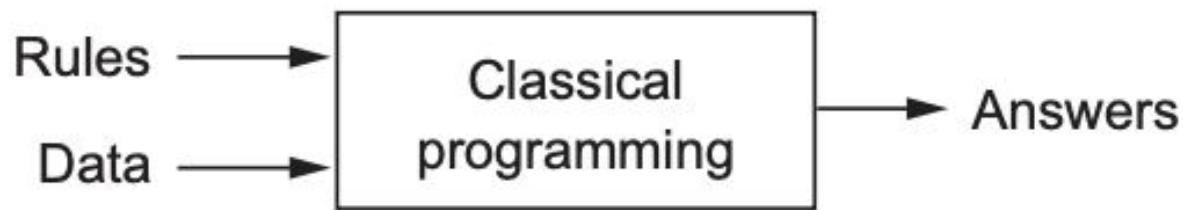


**“The brown quick fox jumps over the lazy dog.”**

# **Syntax rules for adjective order in English:**

- Quantity or number
- Quality or opinion
- Size
- Age
- Shape
- Colour
- Proper adjective (often nationality, place of origin, or material)
- Purpose or qualifier

**Machine learning is learning  
from rules plus experience.**



# What is Machine Learning?

- “Machine Learning is the study of computer algorithms that improve automatically through experience.” ~IEEE
- “Machine Learning is using data to answer questions.” ~Yufeng Guo, Developer Advocate at Google
- Data -> Model -> Prediction

# Google PhotosThe background of the entire image is a photograph of a massive, translucent blue iceberg floating in dark water under a cloudy sky. A black smartphone is centered in the foreground, displaying the Google Photos mobile application. The screen shows a search results page for the query "Dogs". At the top, there's a back arrow, the search term "Dogs", a close button, and a more options menu. Below this, the date "Feb 28" is displayed above a grid of four photos showing dogs. The date "Feb 26" is then shown above a larger grid of twelve photos. The bottom portion of the screen is blank, suggesting a scrollable list of images.

Feb 28



Feb 26





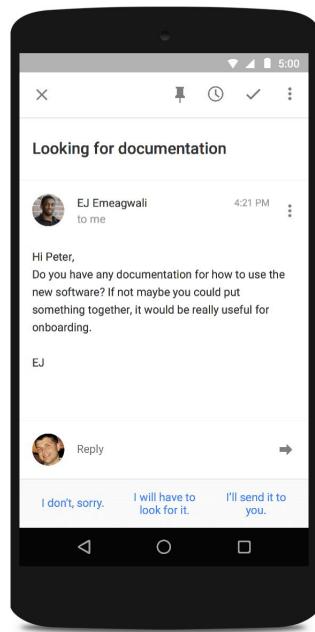
“Ok Google”



# Google Translate



# Gmail Smart Reply



# Google Cloud Machine Learning APIs

- Gain insights from data using Google Cloud's pre-trained machine learning models
- Leverage same technology as Google Photos and Google Assistant
- Require ZERO prior knowledge of ML



**BUILDING  
YOUR  
OWN ML MODEL**

**USING  
GOOGLE CLOUD  
MACHINE  
LEARNING APIs**

# Google Cloud Machine Learning APIs



[Vision](#)



[Video  
Intelligence](#)



[Speech](#)



[Natural  
Language](#)



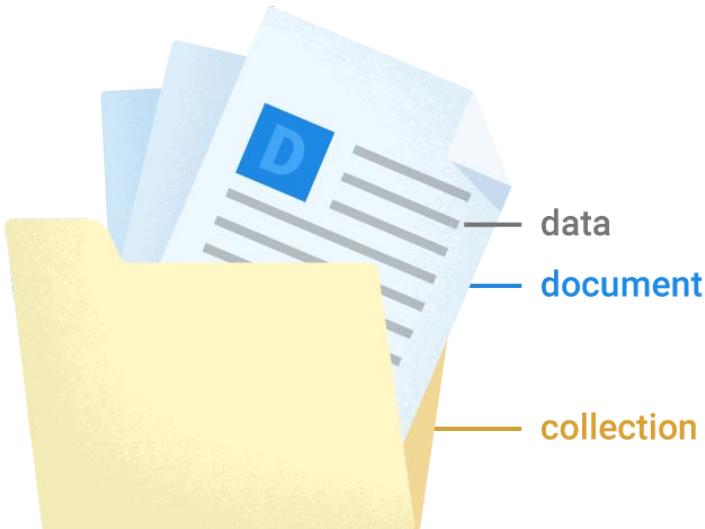
[Translation](#)

# Cloud Firestore

- Powerful NoSQL realtime database
- Ordinary database - query database for new updates
- Realtime database - automatically receive updates when the database is updated
  - Set up a listener object on the client



# Cloud Firestore - Data Model



	users
	alovelace
	first : "Ada"
	last : "Lovelace"
	born : 1815
	sride
	first : "Sally"
	last : "Ride"
	born : 1951

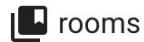
# Cloud Firestore

## Demo

[bit.ly/firestore-game](https://bit.ly/firestore-game)



# Cloud Firestore - Subcollections



rooms



name : "my chat room"



message1

from : "alex"

msg : "Hello World!"

message2

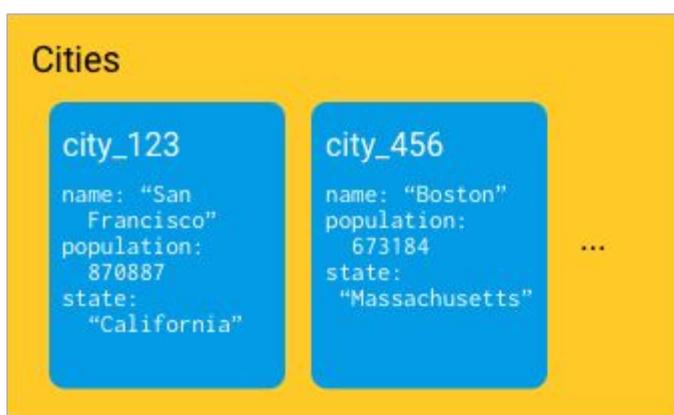
...



roomB

...

# Cloud Firestore - Easy Querying



```
citiesRef  
.where("state", "==", "California")  
.where("population", ">", 500000)
```

# Cloud Firestore - Key Advantages

- Highly scalable database
- Multi-regional data replication
- Strong consistency
- Robust client libraries (iOS, Android, front-end Javascript, Node.js, Python, Ruby, Java, PHP, Go, and .NET)



# API Challenge

**Best Use of Google Cloud** - use any Google Cloud product to qualify.

**Every member of the winning team receives:**

- Google Nest Mini
- Patagonia Backpack
- Cloud Pillow
- Acrylic Trophy
- Water Bottle



# API Challenge

**Best Use of Google Cloud** - use any Google Cloud product to qualify.

**Every member of the second place team receives:**

- Google Nest Mini



# API Challenge

**Best Use of Google Cloud** - use any Google Cloud product to qualify.

**Every member of the third place team receives:**

- Google Nest Mini



# API Challenge

Firebase, Google Maps APIs, and more count for our API Challenge.

Visit [cloud.google.com/products](https://cloud.google.com/products) for the full list of Google Cloud products.



# Google Cloud Credit Coupons

Check for an email from Major League Hacking (MLH) to activate \$50 in Google Cloud free credits!



<< Test First Name >>,

We're excited that you've registered or applied for << Test Most Recent Event >> this weekend, and can't wait to see what you build.

To get started, Google Cloud and MLH are sharing free Google Cloud credits. This gives you access to use the same tools and infrastructure that power Google products for your own project.

Claim your credits:

1. Login to your preferred [Google Account](#) to use during << Test Most Recent Event >>.
2. Make sure you can access [console.cloud.google.com](https://console.cloud.google.com) while signed in.

Some account domains don't have GCP enabled. If you receive an error message when signing into [console.cloud.google.com](https://console.cloud.google.com), use a different account.

CLAIM CREDITS

# Resources

- **App Engine** - <https://cloud.google.com/appengine/>
- **Vision API** - <https://cloud.google.com/vision/docs/>
- **Natural Language API** - <https://cloud.google.com/natural-language/docs/>
- **Cloud Firestore** - <https://firebase.google.com/docs/firestore>
- **Google Cloud Hackathon Toolkit** - [goo.gle/hackathon-toolkit](https://goo.gle/hackathon-toolkit)

# Questions or Need Help?

