



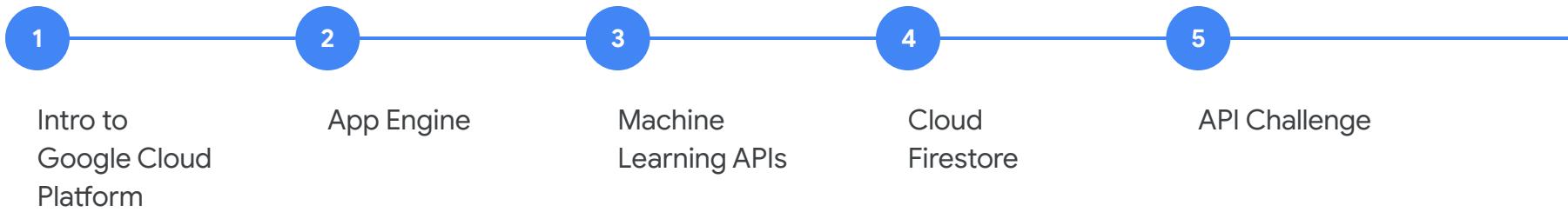
Three Powerful Google Cloud Products for Your Project

Alison Gale - Software Engineer

Pearl Hacks 2020

Google Cloud

Agenda



Dictionary

cloud



cloud

/klaʊd/

noun

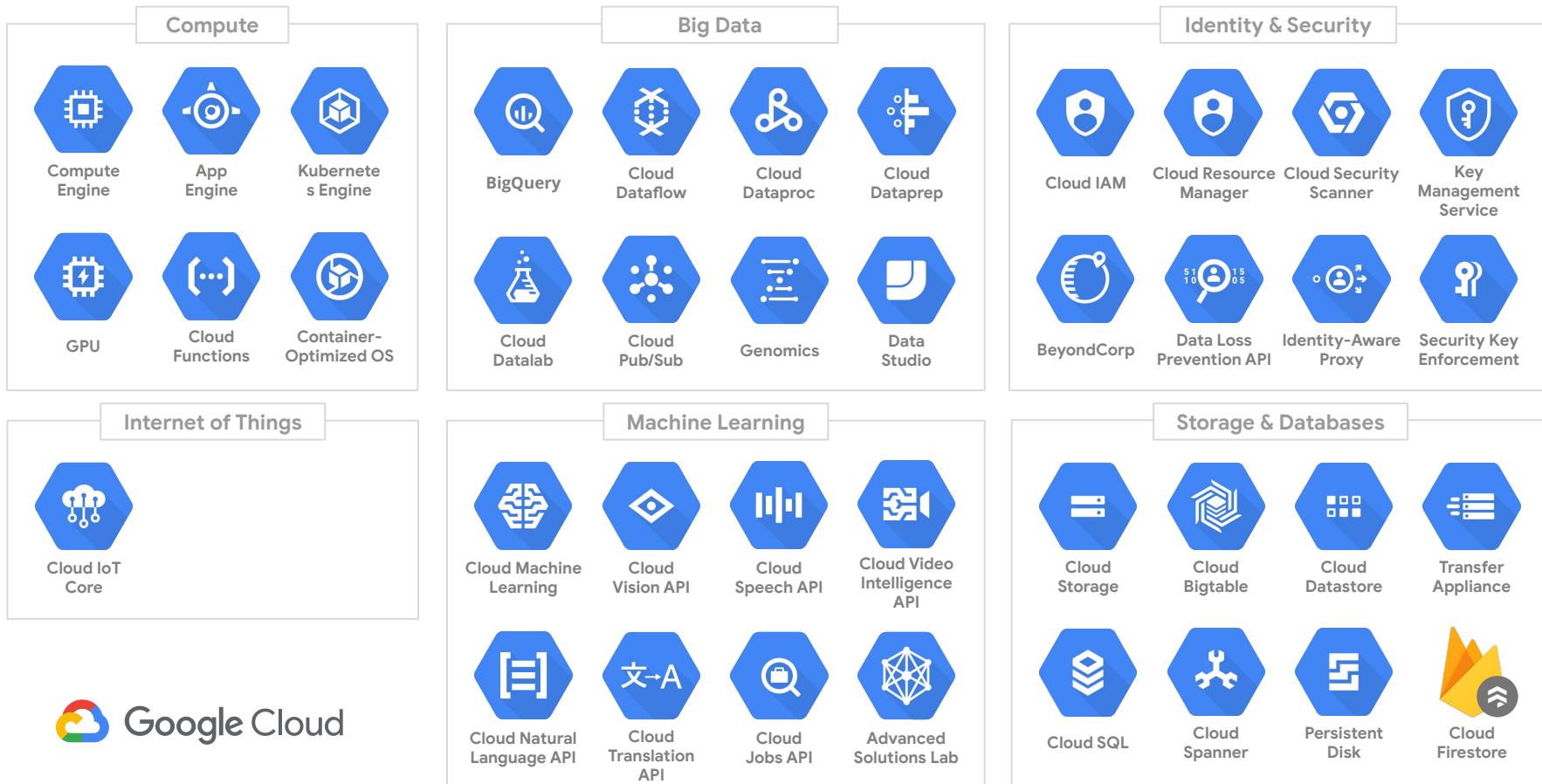
1. **Getting things done using someone else's computers**, especially where someone else worries about maintenance, provisioning, system administration, security, networking, failure recover, etc.

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!

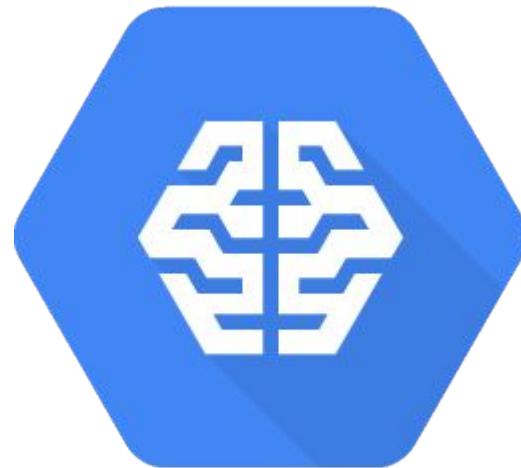


App Engine Demo

[Python Flask App Tutorial](#)



Machine Learning on Google Cloud





Puppy
or
Muffin?



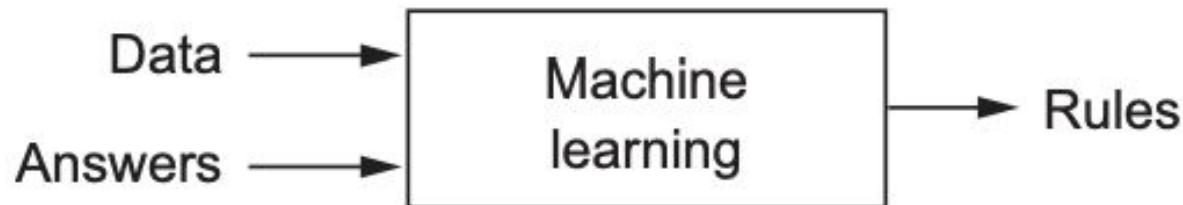
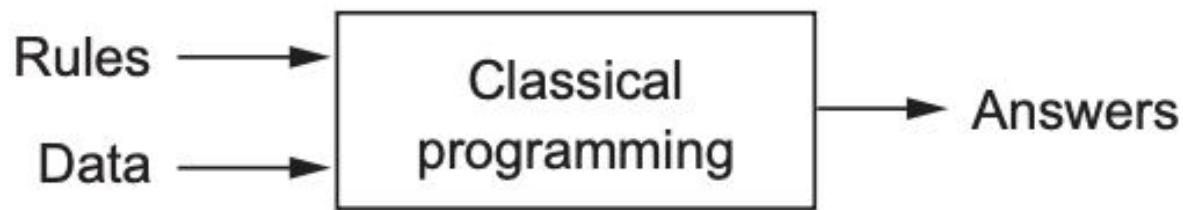


“The brown quick fox jumps over the lazy dog.”

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.

← Dogs

Feb 28



Feb 26





Google Assistant

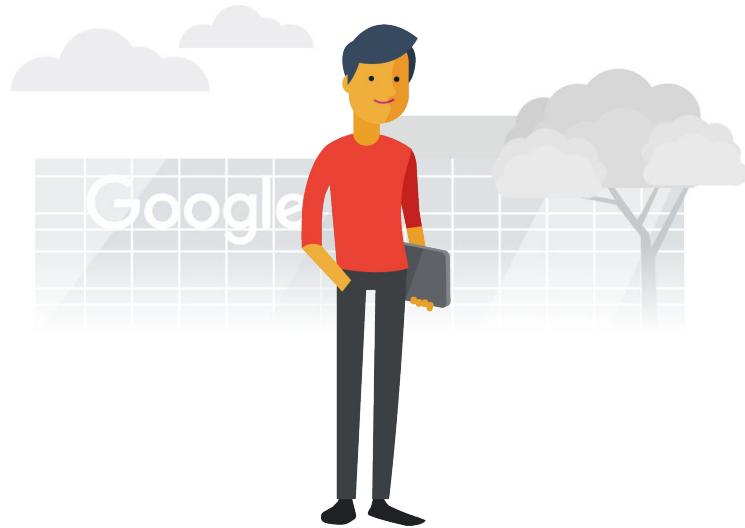


Google Translate



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



Google Cloud Machine Learning APIs



[Vision](#)



[Video
Intelligence](#)



[Speech](#)



[Natural
Language](#)



[Translation](#)

Firebase



What is Firebase?



Cloud Firestore

iOS



Hosting



Authentication

iOS C++



ML Kit

iOS



Cloud Storage

iOS C++



Cloud Functions

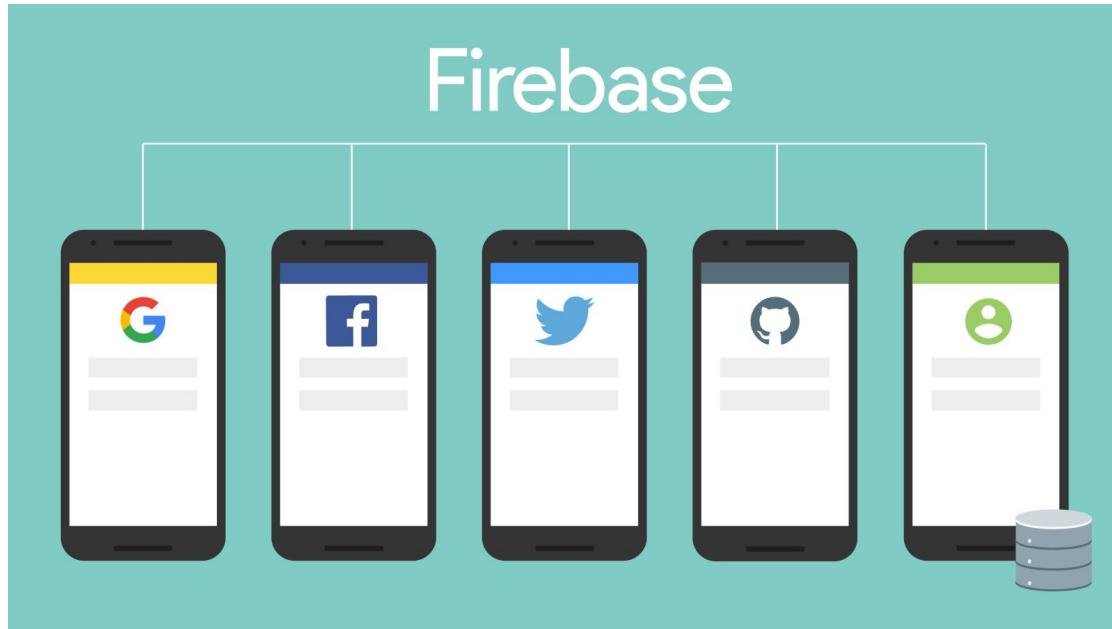
iOS C++



Realtime Database

iOS C++

Firebase Authentication

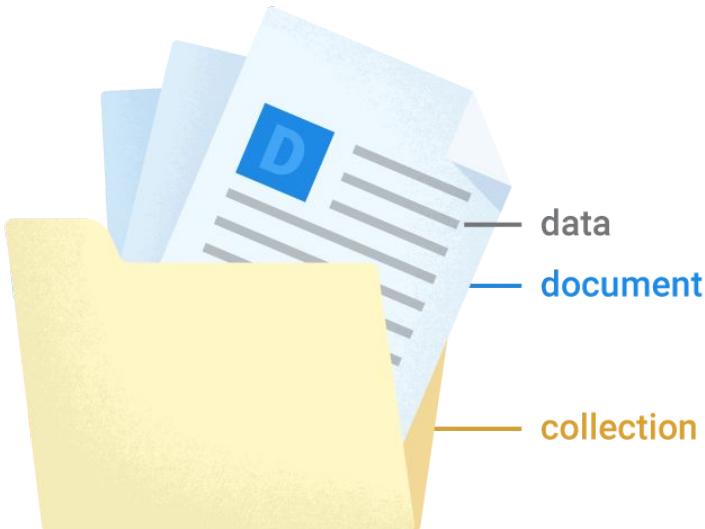


Cloud Firestore

- 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 - 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)



Cloud Firebase

Demo

ratesomecats.com



Jigsaw Overview



*Our mission is to use **technology**
to make the world **safer from digital conflict.***



We forecast emerging threats,
build technology to protect
people, and inspire our partners
and the world to take action.

We research and experiment to address the emerging threat of disinformation.

Research to inform
technological interventions

Experimental tools for
important communities:
journalists, civil society and
academics

Integrating research insights
and technology with Google
teams for Google products

Perspective API

Conversation AI

February 2020
teshg@google.com



Jigsaw

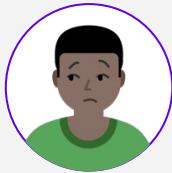
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A close-up photograph of a woman with dark skin and long, thick purple braids. She is wearing a grey t-shirt with a black floral pattern on the shoulder. Her right hand is raised to her forehead, with her fingers resting near her brow. Her left hand holds a pink smartphone. She is looking down at the phone with a serious expression. The background is blurred, showing other people in what appears to be a public space.

PROBLEM STATEMENT

**Online harassment silences the voices
of targets and witnesses of abuse.**

END-USER OPPORTUNITY



Social Media

“People disagree on my support for Trump. They will use **profanity**. So I **respond the same** since I think they are morons.”



Dating Platforms

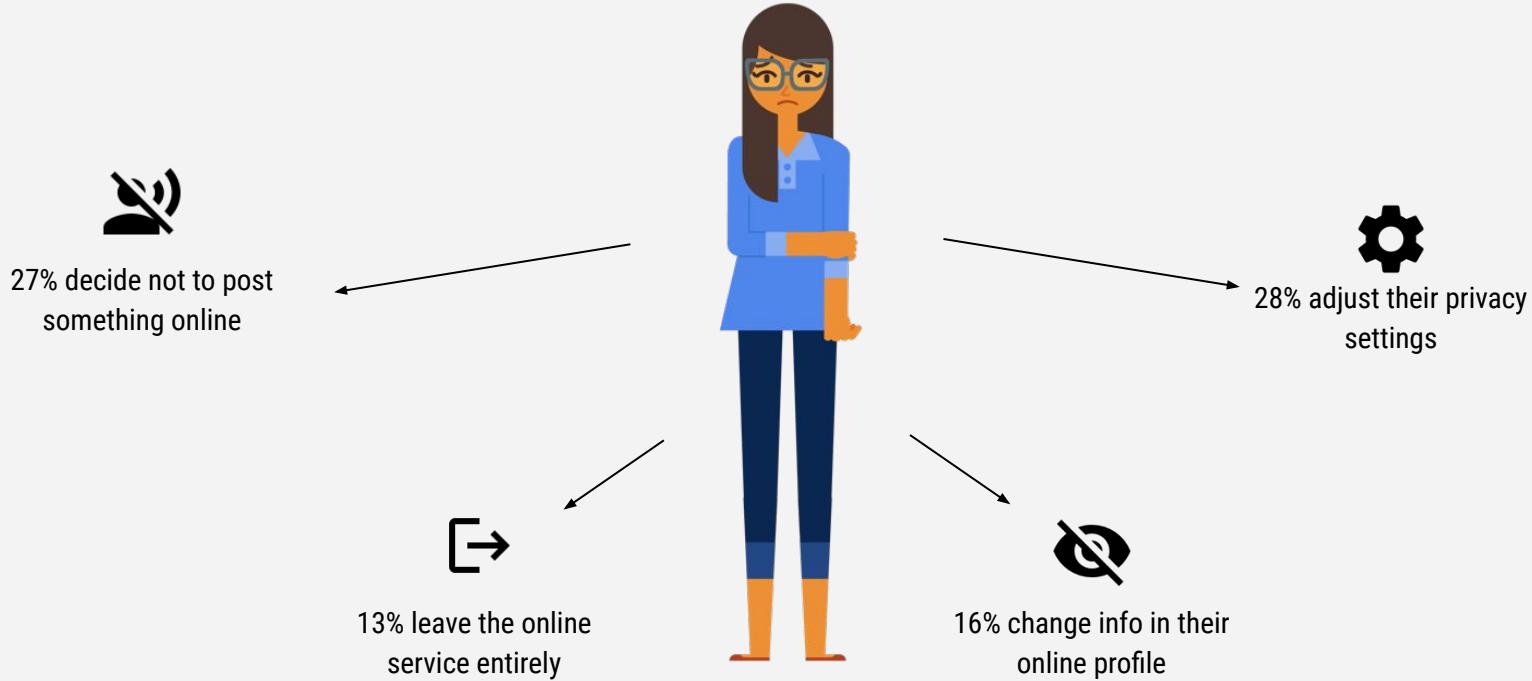
“Mostly on dating websites my friends have had experiences where once turned down, men **threaten** to beat and rape them, murder them, call them names, threaten to ruin their reputation, etc. **I have never used a dating website because of what I have seen.**”



Gaming Platforms

“The **harassment** and constant **sexual overtures** were bad enough I contacted Steam to change all my information, effectively **closing my account and opening a new one.**”

IMPACT ON END-USER BEHAVIOR



GOAL

Ensure more safe and inclusive engagement
in good faith discussions online globally.



Perspective API

Enable effective harassment interventions across platforms by giving developers an API that scores the impact of text.

The world's largest commenting platforms and publishers use Perspective to unlock higher quality conversations, increase participation and grow subscribers

Powering comments and ad reviews on 10 Google products



Moderating 2B+ comments/day on 6 of the 10 largest websites, including social, liberal and conservative outlets



Launched in French, Spanish & English, supporting small and large publishers around the world



STRATEGY



Perspective API Team

Build, Train, Test
Models for API



External Developer

Integrate API with
Product

Make API Request

Get API Response

Display Results or
Action in UI



End-User

Read or Write
Text

View feedback or
action in UI

Update, Remove,
or Approve Text

Impact

IMPACT

The API enables interventions to reduce the amount of toxicity end-users witness or are subjected to, resulting in more and healthy engagement across platforms.

Perspective helps in authorship feedback and realtime chat

SOUTHEAST MISSOURIAN

- ↗ 7% of authors revised comments
- ↘ User reported comments down by ~50%

Though note: ‘Requiring real names did not encourage civil discourse’ ([blog post](#))

FACEIT

UK Multiplayer PvP games - 15 million users

- Warnings/bans issued in realtime
- Users can appeal for human review after the game
- ↘ Toxic messages reduced by 20% ([blog post](#))

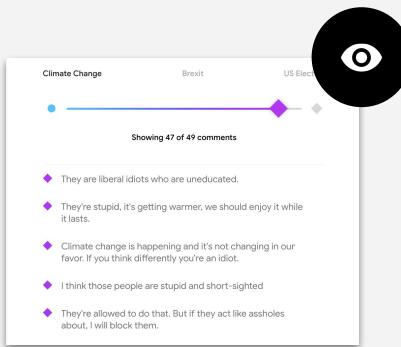
NATIONAL REVIEW

- ↘ Rejected comments reduced by 41%
- ↗ Active commenting users increased by 79%

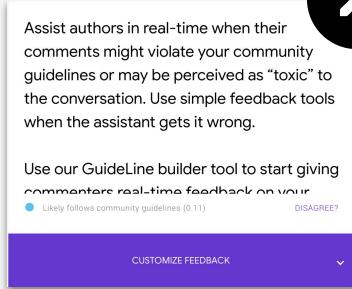
WSJ

- ↘ Decrease in user reported comments
- ↗ Increase in user participation
- ↗ Increase of women participating

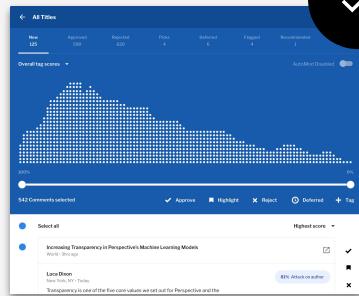
APPLICATIONS



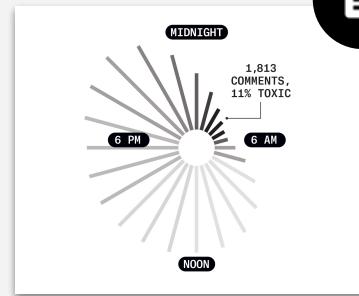
Reading
Content



Writing
Content



Moderating
Comments



Visualizing
Trends

Reading Tool

About

Tune is a Chrome extension that uses Perspective to let end users show or hide comments on YouTube, Reddit, Twitter and FB based on their individual preferences.

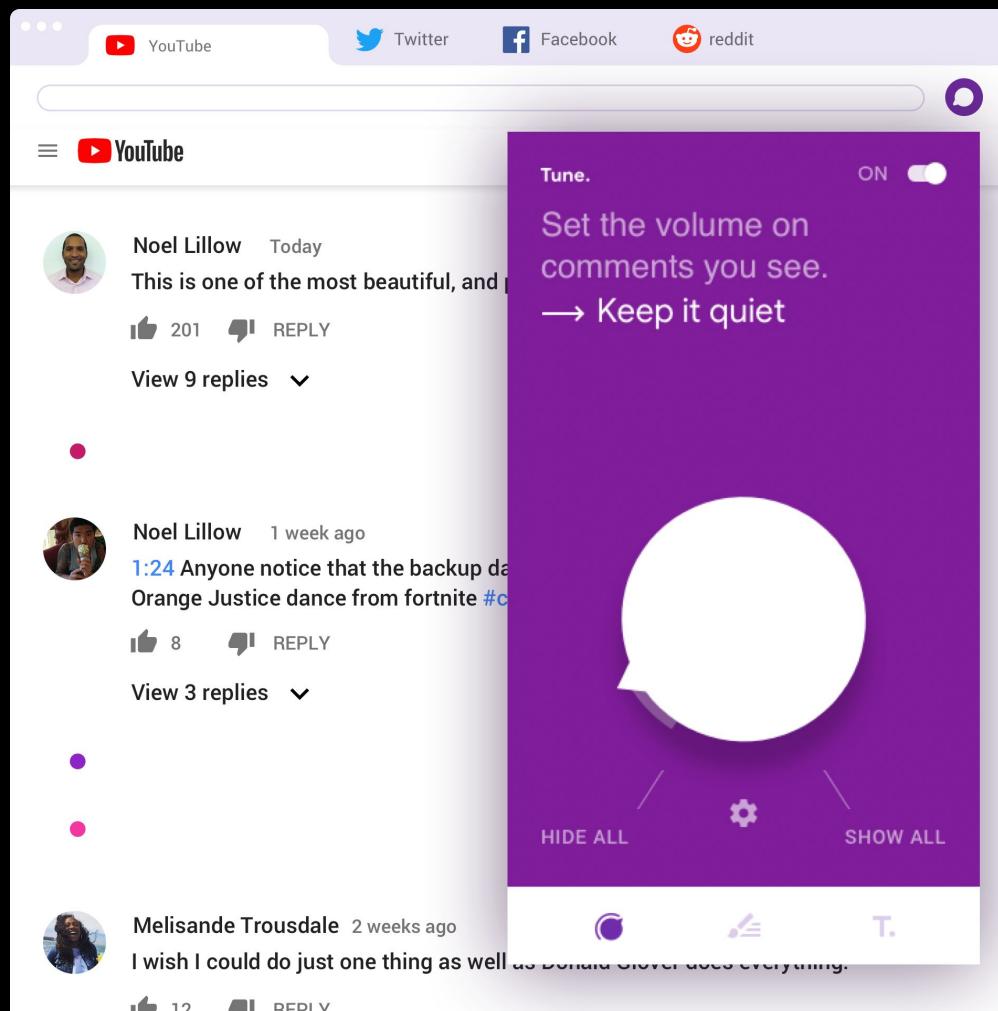
Insight

Currently there is no good way for users to control the comments they see on social platforms.

Impact

Tune is accessible to any users who use Chrome to control the comments they see.

From October 21 to January 21 over 3.3k users accessed Tune.



Writing Tool

About

JS widget allows communities to customize a real-time notification to remind people of guidelines while they type. Open sourced and hosted versions available.

Insight

Research shows a majority of abuse comes from users who are usually non-abusive, and that small, non-judgemental nudges can have a big impact on improving behavior.

Impact

The widget is accessible for implementation in Coral by Vox Media provide feedback.

Type here to see the potential effect of what you are writing.



May violate community guidelines (0.98)

DISAGREE?

Moderation Tool

About

ML moderation assistant for discussions on The New York Times and open sourced.

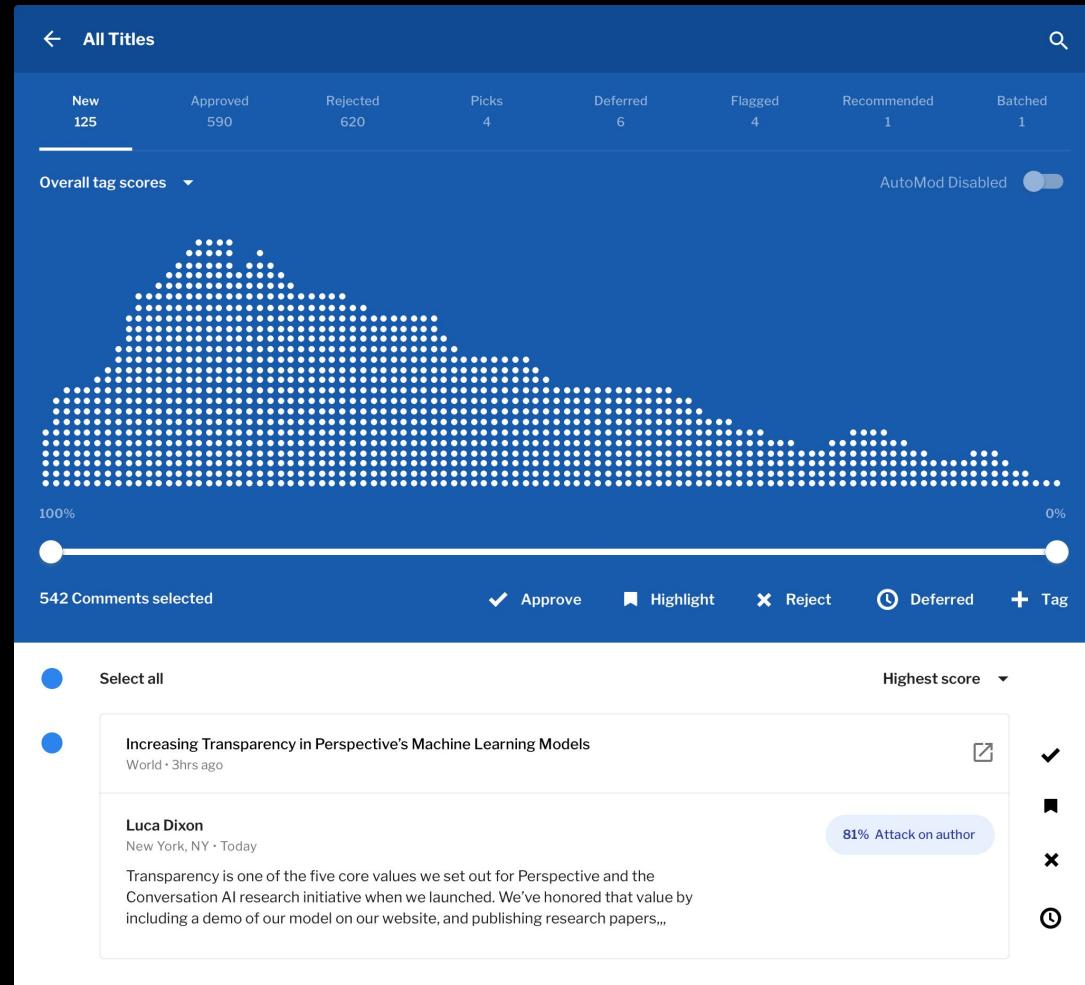
Insight

Moderators manually review all comments across the site. We can build custom models to improve efficiency and create a new UX to prove it.

Impact

3x number of articles open for comments, and all home page articles open for comments (was just a few before)

Articles open for comments for 24 hours instead of 4 hrs.



Moderation Tool

About

Disqus (second only to FB in commenting platform usage) uses Perspective to enable hundreds of thousands of publishers to find and review potentially toxic comments more quickly.

Perspective receives feedback whenever ML and human reviewers disagree, allowing models to improve and custom models to be created per-community.

Impact

Launched for channel owners
Q2 2018

The screenshot shows the Disqus moderation interface. At the top, there are two comment threads:

- 'We Are Living Through a Battle for the Soul of This Nation'** by **George Liquor American** 50 minutes ago. The comment is flagged as **Toxic**. The content is: "How about go f u c k yourself comrade. I give two s h i t s what you think or feel." Below the comment are upvote (↑ 0), downvote (↓ 0), Edit, and Reply links, followed by Approve, Spam, and Delete buttons.
- How the U.S. Can Pressure Pakistan** by **Shiva** 2 hours ago. The comment is flagged as **Toxic**. The content is: "Suck it loser!!" Below the comment are upvote (↑ 0), downvote (↓ 0), Edit, and Reply links, followed by Approve, Spam, and Delete buttons.

Below the threads is a sidebar titled "Filter (1)" with the following options:

- No Issue
- Guest
- Contains Link
- Low Rep.
- Restricted Word
- Flagged
- Toxic** (selected)

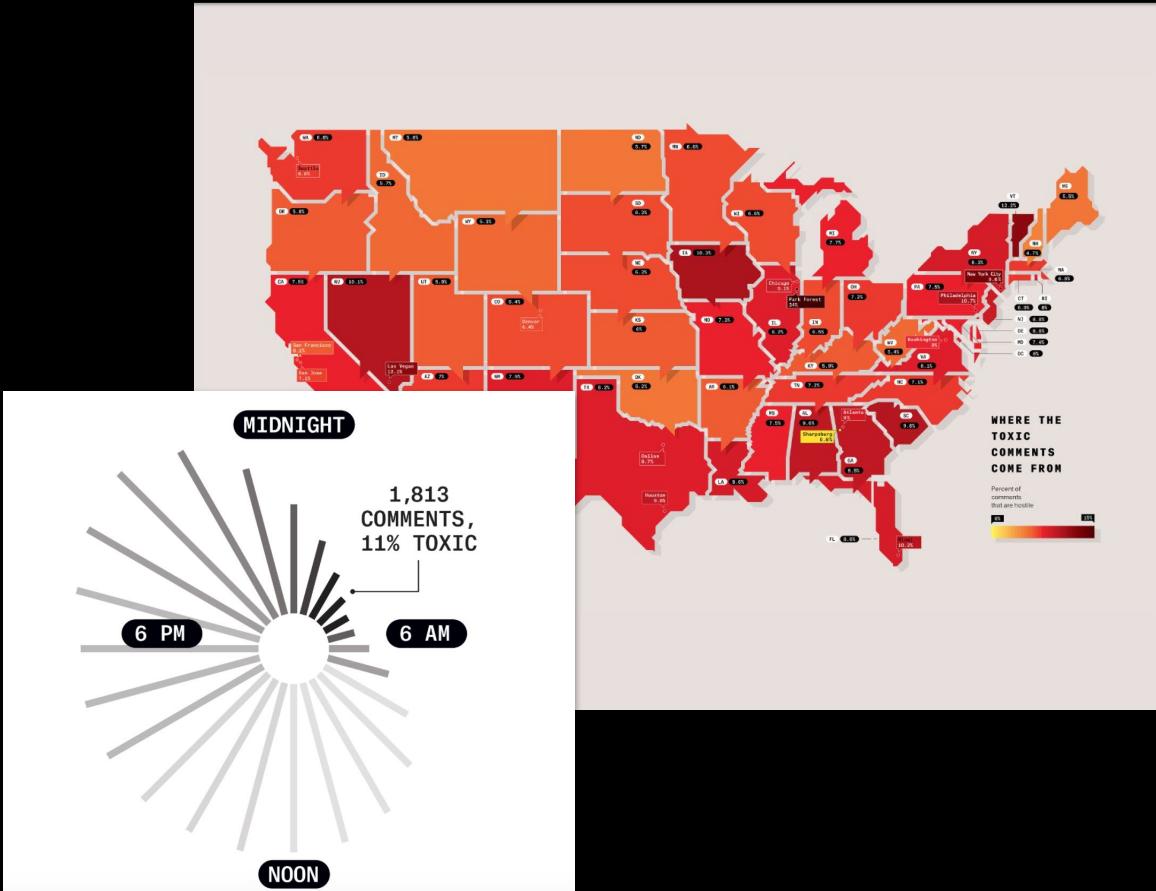
Visualizing Trends

About

A data visualization project from Wired that maps toxicity in discussions across the U.S.

Impact

[Wired published examples of visualizations](#) to show trends in toxic comments.



Getting Started

About Store

Gmail Images



The image shows a Google search interface. At the top is the Google logo. Below it is a search bar containing the text "Perspective API". To the right of the search bar is a microphone icon. Under the search bar is a list of search suggestions, each consisting of a magnifying glass icon, a query, and a "Remove" link. The suggestions are:

- (○) perspective api **authorship feedback** Remove
- (○) perspective api **github** Remove
- perspective api
- perspective api **python**
- perspective api **alternative**
- perspective api **documentation**

At the bottom of the search interface are two buttons: "Google Search" and "I'm Feeling Lucky". Below these buttons is a small text link: "Report inappropriate predictions".

API Challenge: Best Use of Google Cloud

Use any Google Cloud product in your project:

- **App Engine** (web apps)
- **Firebase** (mobile apps + Firebase realtime database)
- **Machine Learning APIs** (Vision, Speech, Natural Language, Translate, Video Intelligence)



Prizes

- **1st Place:** Google Nest Mini, Cloud Patagonia Backpack, Cloud Pillow, Acrylic Trophy, and Cloud Water Bottle
- **2nd Place:** Google Nest Minis



\$50 Google Cloud Credit Coupons

- Check for email from Major League Hacking (MLH)

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 \$100 of 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 while signed in.

Some account domains don't have GCP enabled. If you receive an error message when signing into console.cloud.google.com, use a different account.

[CLAIM CREDITS](#)



Resources

- **Cloud Vision API** - <https://cloud.google.com/vision/docs/>
- **ML API Code Samples** -
<https://github.com/ryanmats/gcp-hackathon-demos>
- **Google Cloud AI Products** -
<https://cloud.google.com/products/ai/>
- **App Engine** - <https://cloud.google.com/appengine/>
- **Perspective API** - <http://www.perspectiveapi.com>

TRIPLE THREAT

Perspective API Prize

- Onboarding Prize (<http://tiny.cc/PAPIONBOARD>)
- SiteMap Prize (<http://tiny.cc/PAPIWEBSITE>)

+

Tech For Social Good Prize

+

Google Cloud API Prize

2:30-3:30	+ Intro to Storytelling and Text Adventures	3408
2:30-3:30	- Three Powerful Google Cloud Products for Your Project Chat about Google Cloud computing and Google Cloud Platform, this talk highlights App Engine, Machine Learning APIs, and Cloud Firestore. For each product, there are interactive demos and example use cases. Downloads: None	3206A/B
	Tags: Google cloud, API, App Engine, Machine Learning, Firebase, Database	
2:30-3:30	+ Automated UI Testing with Cucumber, Protractor, and Chai	3205
2:30-3:30	+ Android 101	3209
3:45-4:45	+ Introduction to Web Development	3408
3:45-4:45	+ Chatbots, Node-Red & Watson API's, Oh My!	3209
3:45-4:45	- Perspective API - effectively create harassment interventions Ensure fewer people are silenced and more people are able to safely engage in good faith discussions online, globally. Enable platforms to effectively create harassment interventions that reach more end-users through an openly accessible API that scores the impact of text. Downloads: Tags:	3206A/B
5:00-6:00	+ Intro to Unity	3407

Questions or Need Help?



These slides can be found at:
bit.ly/3bSTIMI