

# Report on Google products

As Google continues to leverage more artificial intelligence and machine learning in Google Search, one may wonder in what ways AI and machine learning helps Google Search perform its daily tasks. Since 2015, when Google introduced its first AI into search named Rank Brain, Google has continued to deploy AI systems to better understand language and thus improve the search results Google presents to its searches.

## Google Products That Uses AI

- Google Assistant
- Google home
- Google Drive
- Google Smart
- Google News
- Google Map's
- Google Chrome
- Google Calendar
- Nest can outdoor
- Google Search engine
- Gmail Smart
- YouTube
- Google Photos

## AI powering Google Products

AI is deeply integrated into Google Products

Evolving technologies AI, DL and ML.

AI: Powered Products that can help its users into the new technology. Google much interested in Deep Learning in the first place.

Google's primary Goal has always been understand how its users actually use their services, the thought here may include the when, where and how of the usage of its services. Google has also relied on its infrastructure and its array of algorithms that constantly analyse and find way to improve their offering so that the to improvements enable their users to get more stuff.

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## Google Assistant

Google assistant is started May 18, 2016; the programming Language written in C++  
The Algorithms they are using for Google Assistant is Wake Word.

Operating system: Android, Chrome OS, iOS, iPad OS and Linux.

The technology based on AI. The software uses microphone devices.

It is based on neural network algorithm. Google assistant is a virtual assistant software

The technology are used in google assistant is neural language and Machine learning  
Artificial General Intelligence (AGI) 'Strong AI'.

In first phase, Assistant uses visual signals to detect when user is demonstrating an intent to engage with it and then “wakes up” to listen to their.

In second Phase, is designed to further validate and understand the user’s intent using visual and acoustic signals. Look to Talk considers all signals in the first and second processing phases.

These two phases are the core Look and Talk functionality.

In third Phase, voice recognition voice analysis and processing.

Google Assistant support natural sounding conversations for voice searching, it learns from usage patterns and suggests actions.

## New Features Google Assistant

1. Long from reading
2. Scheduled Actions
3. Sticky Notes

## Drawbacks of Google Assistant

- It will not work without a net.
- Hang on your mobile.
- Maximum battery use.
- High net use.
- Heat your mobile.

## Market Growth of Google Assistant

Google Assistant has more than 500 Million Monthly active users and available in more than 90 countries.

# **Report on Google products**

## **Google Photos**

Google Photos and Sharing. It is launched on May 28, 2015. Operating system are Android, iOS and web.

Google Photos as online Photo album allows users to seamlessly manage the photos captured.

AI and ML techniques to offer smart features, such as the automatic grouping of photos based on the subjects inside. A smart filter that automatically analyses and enhances the best, integration with Google lens Identify objects and test and much more.

The algorithm they are using for Google photos pull-push denoising algorithm that is paired with a de blurring method, called poly blur. Both of these components are designed to maximize computational efficiency, so users can successfully enhance the quality of a multi-megapixel image in milliseconds on a mobile device.

In Google Photos the use of AI to make images easier to search and organize by people, place, and things. It also power features go beyond search and organization use AI to automatically combine photos and video in a short movie set to music and generate animations for photo bursts. AI creates colleges featuring a recent photos of someone next to an order of them in a similar phase. Make memories of some pictures.

Both ML and AI is used for Google photos.

The app will recognize the face on the photos based of grouped photos the app will suggest the list of persons whom to share the photos based on the faces it recognized.

Increases the space by AI archiving.

## **New Features Google Photos**

1. Fix blurry shots with photo un blur
2. Get rid of distractions with magic eraser
3. Make your subject stand out with portrait blur
4. Improve the lighting on the fact with portrait light
5. Bring balance to your photos with the HDR effect
6. Change up the mood and tone of sunset pics with sky suggestions
7. Use the collage editor to make shareable creations

## **Drawbacks of Google Photos**

- No more free unlimited photo storage.
- Lacks step undo for editing.
- No blemish or red eye removal tool.
- No built-in sharing to Instagram or Flickr

## **Market Growth in Google Photos**

In November 2020, Google announced that more than 4 trillion photos are stored in Google photos, and every week 28 billion new photos and videos are uploaded.

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## **Google Maps**

Google Maps is a Web mapping launched 8 Feb 2005 Written in C++ (back-end), java script, XLM, Ajax.

The algorithm they are using for Google Maps essentially uses two Graph algorithms Dijkstra's algorithm and A\* algorithm, to calculate the shortest distance from point A(Source) to point B (destination). A graph data structure is essentially a collection of nodes that are defined by edges and vertices.

Google maps is a handy navigation system from google and is available on Android, iOS and web. It is mapping application and is extremely popular among its users, satellite imagery, 360 degree maps, indoor maps and live traffic conditions are just some of the featured offered by google maps.

Google has implemented Several AI and ML powered features in google maps such as integration with Google Assistant, which analyses the user's commuting routine and suggest routes which less traffic and delays based on live dates recommendations for nearby points of interest, such as gas stations, place to eat, ATMs and more.

## **New Features Google Maps**

1. Get a vibe check before you visit
2. Now live: 250 landmark aerial views around the world.
3. A breakthrough for live view.
4. Helping companies and developers operate more sustainably.

## **Drawbacks of Google Maps**

- Limited Accuracy
- Use by criminals
- Offensive and shocking material

## **Market Growth of Google Maps**

The digital map market size to grow from USD 19.2 billion in 2021 to USD 37.0 billion by 2026, at a compound annual growth rate of 14.1% during the forecast period.