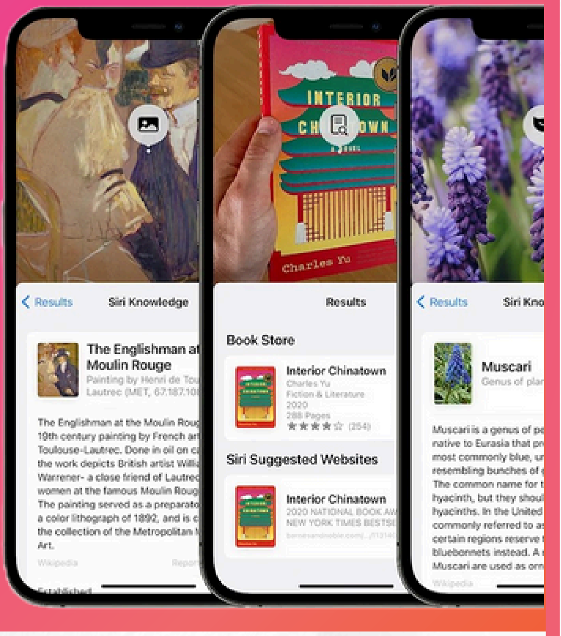
FEBRURY 5, 2025

ENHANCED VISUAL SEARCH

APPLE

BLUF: This will only work for devices with iOS 18, as it needs to have the Apple AI installed on the device. You are able to turn it off, as directed below, but are automatically opted-in when you update your device. Apple's Enhanced Visual Search prioritizes privacy by using on-device processing and advanced encryption techniques. It analyzes your photos locally, creates an encrypted "embedding" for landmarks, and sends it to Apple servers for matching without revealing the photo content. Privacy measures like homomorphic encryption, differential privacy, and OHTTP relay ensure your data remains anonymous and untraceable. No photos or personal info are stored or linked to your account. As long as it all works properly, Apple cannot see what is in the photos.



Results Siri Knowledge

The Englishman at
Moulin Rouge
Painting by Henri de Tou
Lautrec (MET, 67.187.10

The Englishman at the Moulin Roug
19th century painting by French ar
Toulouse-Lautrec. Done in oil on c
the work depicts British artist Willi
Warrener- a close friend of Lautrec
women at the famous Moulin Roug
The painting served as a preparato
a color lithograph of 1892, and is c
the collection of the Metropolitan
Art.

Wikipedia Repor

Established

Results

Book Store

Interior Chinatown
Charles Yu
Fiction & Literature
2020
288 Pages
★★★★☆ (254)

Siri Suggested Websites

Interior Chinatown
2020 NATIONAL BOOK AW
NEW YORK TIMES BESTSE
barnesandnoble.com/.../1131

Results Siri Kno

Muscari
Genus of plan

Muscari is a genus of pe
native to Eurasia that pr
most commonly blue, u
resembling bunches of
The common name for t
hyacinth, but they shoul
hyacinths. In the United
commonly referred to as
certain regions reserve
bluebonnets instead. A
Muscari are used as orn

Wikipedia

HOW DOES IT WORK

First, an on-device machine learning model determines whether a photo or video in your library is likely to contain a landmark or point of interest. Then it creates a low-fidelity mathematical representation of the part of that photo that might contain the landmark, called an embedding. This embedding — not image data — is encrypted and sent to Apple servers, where it's compared against a global list of landmarks and places that are too big to fit on your device.

- The decryption keys remain on your device, so that Apple servers can't decrypt the encrypted embedding or search result.
- The encrypted embedding is used only to return your search results and aren't used to supplement Apple's global list or for any other purpose. The search request (including the encrypted embedding) isn't stored by Apple after your search results are returned to your device.
- The search request (including the encrypted embedding) isn't linked to your Apple Account and can't be associated with your account or device.

APPLE'S STATEMENT

> *"Enhanced Visual Search was built from the ground up to protect your privacy, combining on-device processing with other privacy-preserving techniques. As a result, Enhanced Visual Search works without sending your photos or videos to Apple and without Apple learning about the information in those photos or videos."*
>
> *January 30, 2025*

PRIVACY-PRESERVING TECHNIQUES:

Used by Enhanced Visual Search to maintain your privacy while matching the places in your photos to the landmarks in the global list

HOMOMORPHIC ENCRYPTION

A technique that allows your search to be performed with the encrypted embedding without decrypting it. The Apple servers receive the encrypted embedding, match it to the landmarks in the global list, and then send back encrypted search results. Your device uses decryption keys stored only on your device to decrypt and show those results. Apple servers can't decrypt the embedding or search results, because they don't have access to the decryption keys.

DIFFERENTIAL PRIVACY

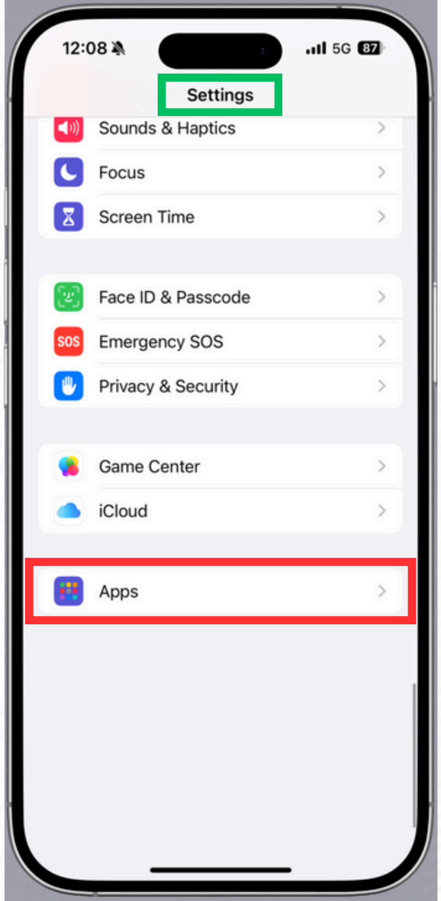
A technique that masks your search request (including the encrypted embedding) by adding noise, or fake information, so that it becomes extremely difficult to figure out anything about a request or encrypted embedding sent from any one device. When you search with Enhanced Visual Search, your device sends fake requests alongside the request from your device, so that the server can't identify which is the genuine request.

OBLIVIOUS HTTP (OHTTP) RELAY

A third-party anonymization network that hides your IP address before your device's search request reaches Apple servers, which helps prevent any request from being linked to you, your device, or any previous request sent by your device.

HOW TO TURN OFF ENHANCED VISUAL SEARCH

1

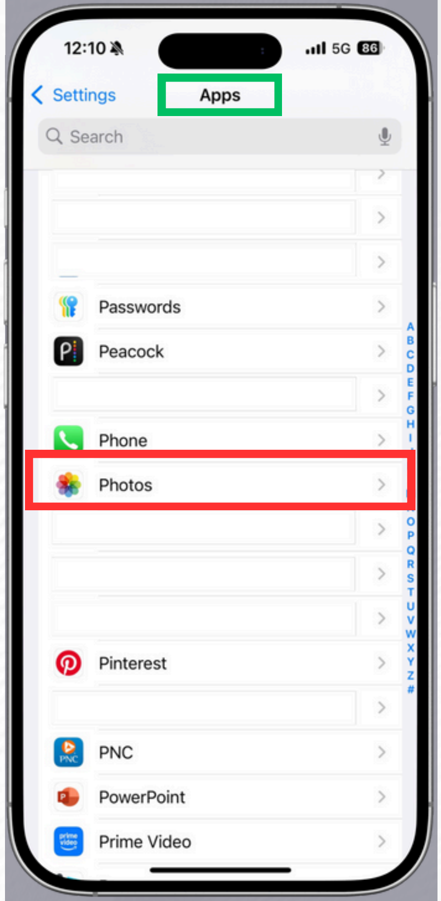


1. Navigate to the “Settings” app

2. Scroll down to “Apps”

3. Select

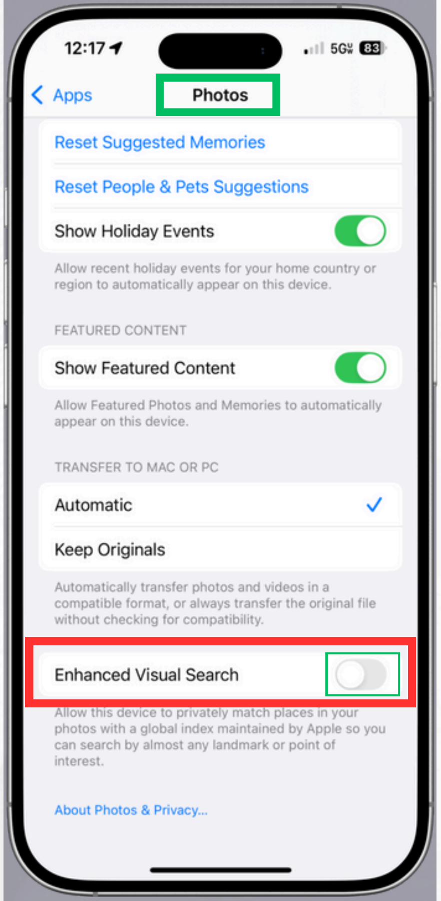
2



1. Scroll down until you see “Photos”

2. Select

3



Reset Suggested Memories

Reset People & Pets Suggestions

Show Holiday Events

Allow recent holiday events for your home country or region to automatically appear on this device.

FEATURED CONTENT

Show Featured Content

Allow Featured Photos and Memories to automatically appear on this device.

TRANSFER TO MAC OR PC

Automatic ✓

Keep Originals

Automatically transfer photos and videos in a compatible format, or always transfer the original file without checking for compatibility.

Enhanced Visual Search

Allow this device to privately match places in your photos with a global index maintained by Apple so you can search by almost any landmark or point of interest.

About Photos & Privacy...

1. Scroll down until you see “Enhanced Visual Search”

2. Slide to toggle off (it will look like the above photo if done correctly)

Sources:
https://support.apple.com/en-us/122033wait
https://www.theregister.com/2025/01/03/apple_enhanced_visual_search/