Title: Proposal for Emoji: FINGERPRINT
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1 Identification

A. CLDR short name: FINGERPRINT
B. CLDR keywords: biometric; crime; crime scene; criminal; dactylogram; dactyloscopy; dermatoglyphics; finger; fingerprint; identification; identity; latent; minutia; phalange; phalanx; ridge.

2 Images

Figure 1: Black and white[1].

Figure 2: Color[1].

3 Sort Location

A. Category: person-symbol
B. The emoji in that category that it should come after: people hugging (U+1FAC2, before footprints U+1F463)

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[1]CC0: Rafaella Ferraro

5 Selection Factors—Inclusion

A Compatibility:

n/a

B Expected usage level

B.1 Frequency

B.1.a Google® Search The results of a Google® search for "fingerprint" are shown in Figure 3, showing 159 million results. Reproducible at: `https://www.google.com/search?q=fingerprint`.
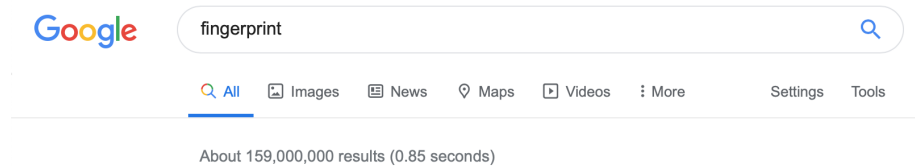

Figure 3: Google® search for "fingerprint," conducted 28 March 2020.

Fingerprints are an *extremely* accurate form of unique identification. The results of a Google® search for "identification" are shown in Figure 4, showing 1.86 billion results. Reproducible at: `https://www.google.com/search?q=identification`.
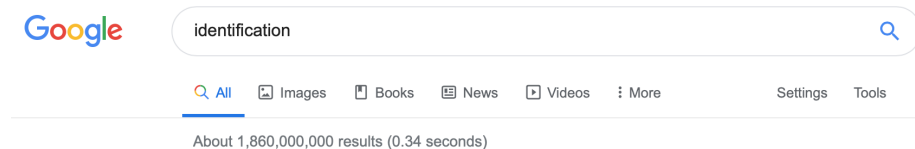

Figure 4: Google® search for "identification," conducted 28 March 2020.

B.1.b Bing® Search   The results of a Bing® search for "fingerprint" are shown in Figure 5, showing 30.1 million results. Reproducible at: `https://www.bing.com/search?q=fingerprint`.
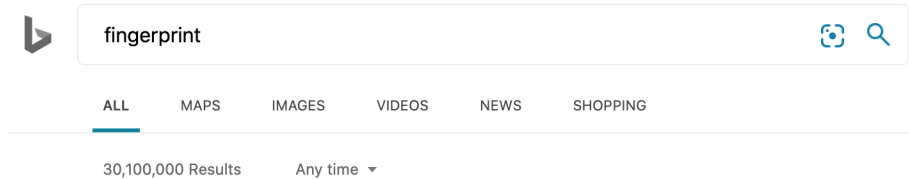

Figure 5: Bing® search for "fingerprint," conducted 28 March 2020.

Fingerprints are an *extremely* accurate form of unique identification. The results of a Bing® search for "identification" are shown in Figure 6, showing 159 million results. Reproducible at: `https://www.bing.com/search?q=identification`.
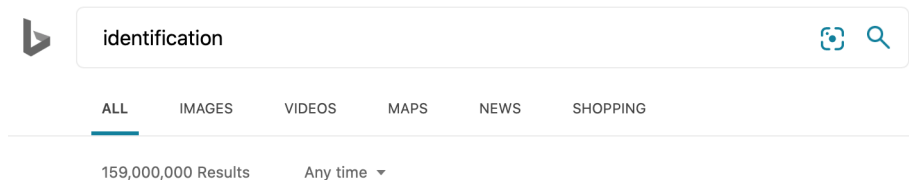

Figure 6: Bing® search for "identification," conducted 28 March 2020.

B.1.c Google® Video Search   The results of a Google® Video search for "fingerprint" are shown in Figure 7, showing 12.3 million results. Reproducible at: `https://www.google.com/search?q=fingerprint&tbm=vid`. It should be noted that fingerprints do not necessarily lend themselves to being filmed, but are prevalent in popular criminal investigative and true crime television shows.
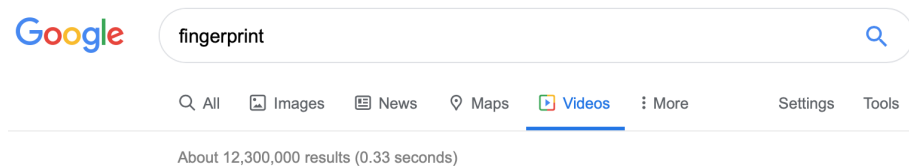

Figure 7: Google® Video search for "fingerprint," conducted 28 March 2020.

B.1.d   Google® Trends: Web Search   The results of a Google® Trends: Web search for "fingerprint" vs "elephant" are shown in Figure 8. Reproducible at `https://trends.google.com/trends/explore?date=all&q=elephant,fingerprint`
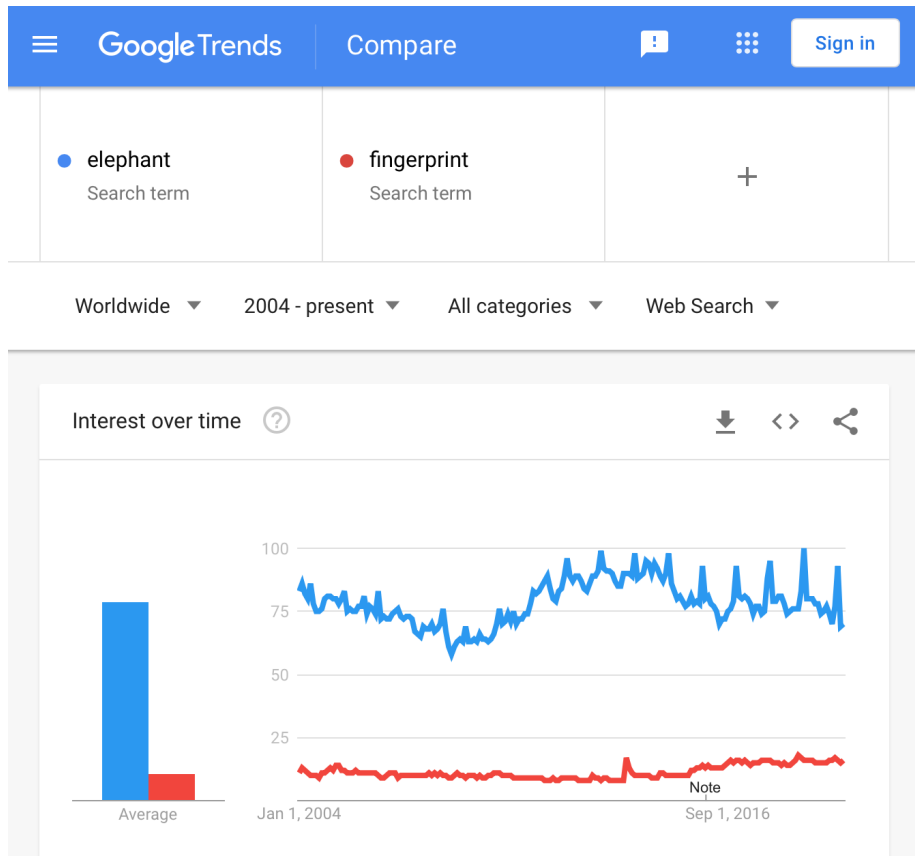

Figure 8: Google® Trends: Web Search for "elephant" and "fingerprint," conducted 28 March 2020.

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Fingerprints are an *extremely* accurate form of unique identification. The results of a Google® Trends: Web search for "fingerprint" vs "elephant" are shown in Figure 9. Reproducible at `https://trends.google.com/trends/explore?date=all&q=elephant,identification`
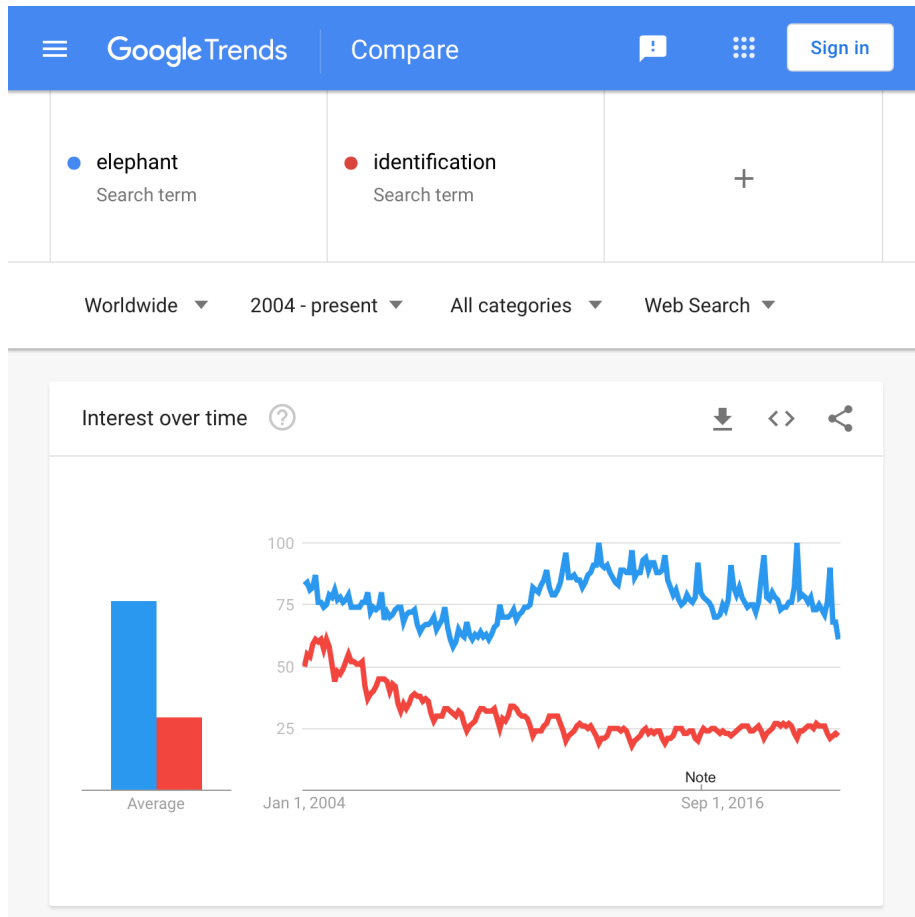

Figure 9: Google® Trends: Web Search for "elephant" and "identification," conducted 28 March 2020.

B.1.e   Google® Trends: Image Search   The results of a Google® Trends: Image search for "fingerprint" vs "elephant" are shown in Figure 10. Reproducible at `https://trends.google.com/trends/explore?date=all_2008&g prop=images&q=elephant,fingerprint`.
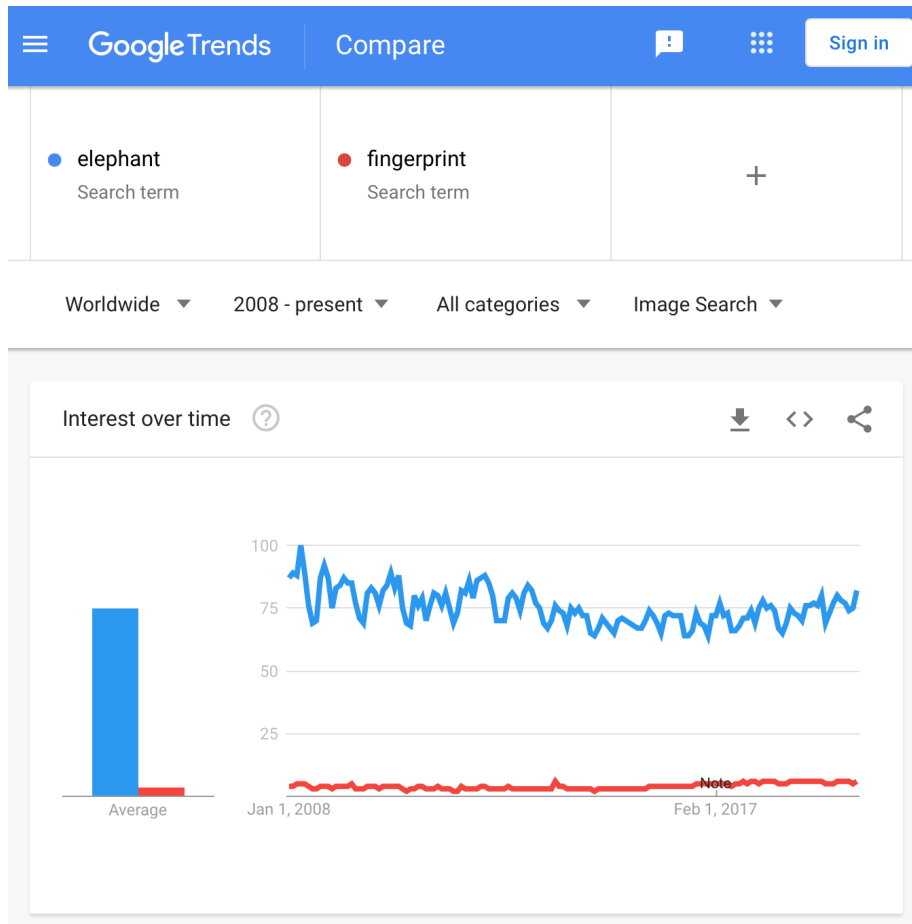

Figure 10: Google® Trends: Image Search for "elephant" and "fingerprint," conducted 28 March 2020.

B.2 Multiple Usages

- Identity, identification, official documentation.

- Unique, "one in a million".[1]

- Crime, crime scene, evidence.

- Smudged, sticky.

- Touch, being touched.

B.3 Use in sequences

- Joining

  - index pointing up (`U+261D`) + (magnifying glass tilted left (`U+1F50D`) **OR** microscope (`U+1F52C`)) = FINGERPRINT

- Linear

  - "No touching": prohibited (`U+1F6AB`) + FINGERPRINT
  - "Crime scene investigator": detective (`U+1F575`) + FINGERPRINT
  - "Fingerprint unlock": unlocked (`U+1F513`) + FINGERPRINT
  - "Fingerprint phone unlock": FINGERPRINT + mobile phone with arrow (`U+1F4F2`)
  - "Official document": page facing up (`U+1F4C4`) + FINGERPRINT

- Collections

  - "Biometrics": FINGERPRINT + bust in silhouette (`U+1F464`) + eye (`U+1F441`) + dna (`U+1F9EC`)

B.4 Breaking new ground

Yes: this emoji describes a mark that the human body produces, whereas most human-related emoji describe a physical body part.

C Distinctiveness

The image of a fingerprint is an extremely recognizable visually depictable entity. Nearly every human that has ever lived has ten unique fingerprints on their own body. On the contrary, humans have but *one* face (that may be shared with a monozygotic sibling), although there are several emoji depicting faces. Ubiquitous products like smartphones from a plethora of manufacturers already

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[1]This quote is a colloquialism. Fingerprints are universally unique.

use image-based versions of a fingerprint throughout their operating systems, as seen in Figure 11.

Although there are several emoji of fingers, none represent the mark left by a finger, nor the action of placing the finger on a sensor to capture a fingerprint.
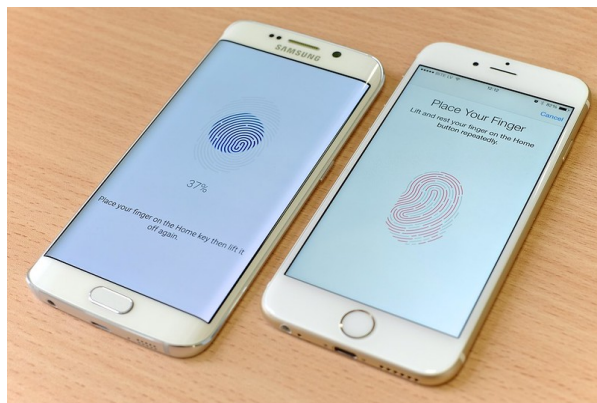

Figure 11: Picture of a Samsung® Galaxy S6 Edge® and an Apple® iPhone® with integrated fingerprint-sensing features being configured, both showing custom image-based versions of a fingerprint[1].

D   Completeness

Common biometric modalities like face (`U+1F464`), iris (`U+1F441`), and voice (`U+1F5E3`) can be represented by existing emoji. FINGERPRINT cannot.

6   Selection Factors—Exclusion

E   Petitions or "frequent requests"

n/a

F   Overly specific

n/a: FINGERPRINT represents a new type of emoji that breaks new ground.

G   Open-ended

Because it is a new type of object, FINGERPRINT could be considered open-ended.

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[1] *Samsung Galaxy S6 Edge* by Kārlis Dambrāns, CC BY 2.0, `https://www.flickr.com/photos/janitors/16946918179/`.

H   Already representable

One might argue that FINGERPRINT could be represented by "index pointing up" (U+261D), but this character shows an entire hand and does not show friction ridge structure. It is a different emoji entirely.

I   Logos, brands, UI icons, signage, specific people, specific landmarks, deities

- FINGERPRINTS is the name of a biometrics company based in Sweden, https://www.fingerprints.com.

- Many personal computing technology manufacturers use a kind of fingerprint representation in the operating system when prompting a user to authenticate, as indicated in Section C. Examples include, but are not limited to, Apple®'s Touch ID®, Samsung®'s Fingerprint ID, and Microsoft®'s Windows Hello® support for fingerprint scanners.

J   Transient

Humans have had fingerprints since the beginning of time and their biology should not be expected to change in the near future.

K   Faulty comparison

n/a

L   Exact image

No.

M   Region Flags Without Code

n/a

7   Other information

- Fingerprints are primarily structured by a series of curved ridges. Breaks in the ridges primarily in the form of ridge endings or bifurcations—known as minutia—are what allow practitioners of dactyloscopy to distinguish fingerprints. Any representation of a fingerprint should have minutia.

- The emoji may indicate the act of willingly providing a fingerprint by placing a finger on a scanning device (perhaps titled, "FINGER BEING SCANNED"). However, the fingerprint mark itself its likely more recognizable on its own.

- Billions of individuals worldwide have their fingerprints enrolled into an Automated Fingerprint Identification System (AFIS) and so would be familiar with FINGERPRINT. 1.25 billion Indian citizens are enrolled into Aadhaar[2], which performed 29 billion fingerprint comparisons in the past 12 months[3]. There are over 8 million United States Transportation Security Administration (TSA) PreCheck™ members[4], all of whom have been fingerprinted. The country of Brazil plans to fingerprint its 200 million citizens starting in August 2020[5]. Fingerprints have been used for identity proofing since at least the time of first Babylonian dynasty (1894 BC) and will surely continue well into the future.

- It is possible to use FINGERPRINT to express identity *without* gender or skin tone being considered.

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[2]https://uidai.gov.in/aadhaar_dashboard/
[3]https://uidai.gov.in/aadhaar_dashboard/auth_trend.php?auth_id=biofingure
[4]https://www.usatoday.com/story/travel/flights/2019/06/19/tsa-precheck-cheaper-easier-mobile-enrollment-airport-security/1490777001/
[5]https://www.zdnet.com/article/brazilian-government-to-create-single-citizen-database/