Evaluation – Google Lens

TRANSLUE

Hochschule für Wirtschaft und Recht Berlin
Berlin School of Economics and Law

- → Function list: offered/planned main functions
- → What kind of tech are they using?
- → Flow chart showing how the app works
- → Useful infos beyond the above mentioned

Function list: Offered main functions

Image detection, but considering situational context

- e.g. Take a picture of the password on a WiFi router -> Phone connects to WiFi.
- Highlight + Copy real-world text within the app -> OCR
- Detection of animals, flowers, Google-registered restaurants (latter with GPS)
  -> Provide definitions and restaurant ratings
- Identify objects in your environment
  -> Provide actionable info like purchase links

Travelers can point their phone at a photo of a destination or landmark and get information about it as well as flight options to purchase. [1] [2]

Function list: Planned main functions

- Interconnection with Google Assistant (allow for voice + image processing)
  → „Ok Google, book a flight to the city on this photo.“

[1] [2]

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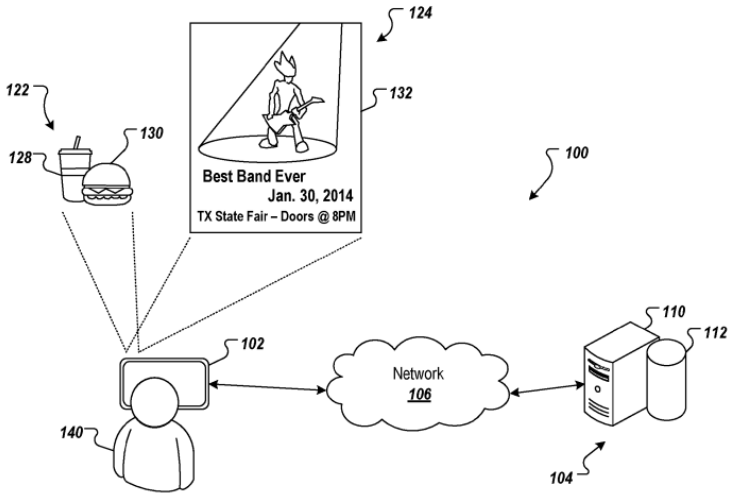
Technologies making up Google Lens

Large parts of the technology used were developed by Google from the ground up.
-> **Patents. Patents everywhere.**



[3]

FIG. 1

Exact processes done on the phone and server remain a secret.

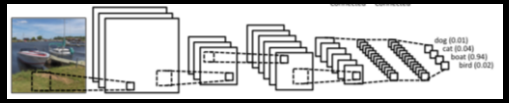
Here they are anyway ->

Technologies making up Google Lens

Google RPN (Region Proposal Network) (not public):

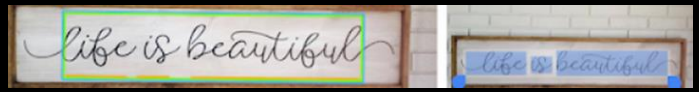
A fully convolutional neural network type, simultaneously predicts object bounds and “objectness” scores at each image position, trained to generate high-quality region proposals for objects -> Where to look

Convolutional Neural Networks (CNNs, R-CNNs) (not public):



Used to detect coherent text blocks like columns, or text in a consistent style or colour. Detects text-alignment, language, and the geometric relationship of the paragraphs to determine their final reading order. (contextual grouping of image’s text contents)

Google Knowledge Graph Search API (public):



Provides contextual clues, such as whether a found word is likely a noun, should not be corrected etc.

Google Neural Machine Translation Algorithms (not public):

Used to translate entire sentences at a time, rather than going word-by-word, in order to preserve proper grammar and diction.

[5] [6] [7]

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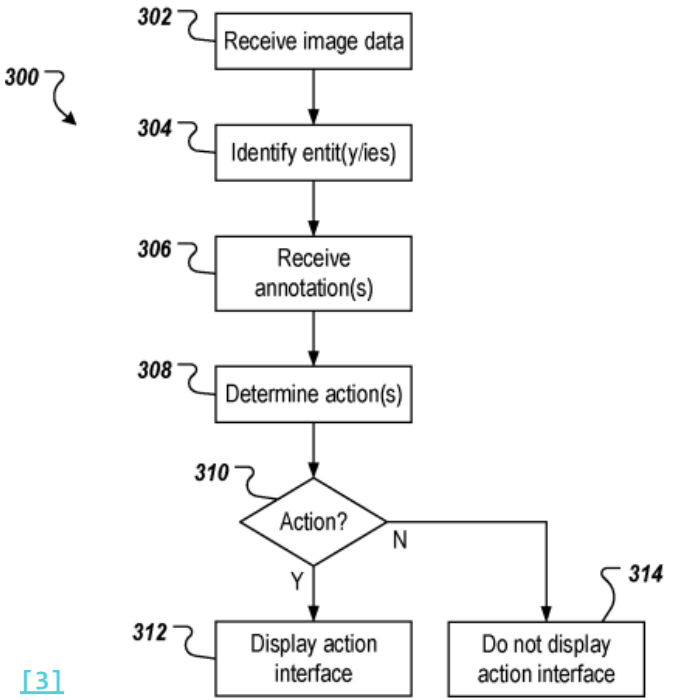
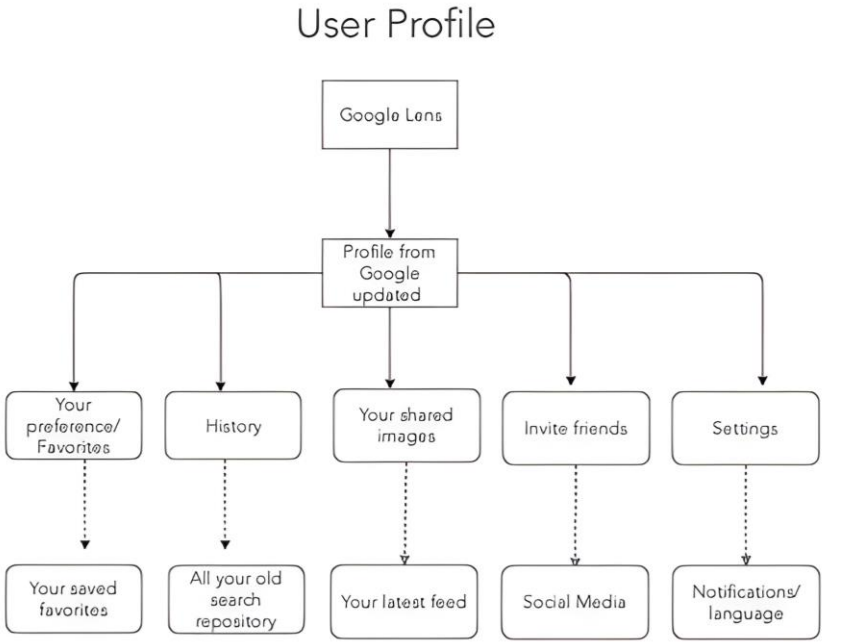
Flow Chart

Google‘s own patent:



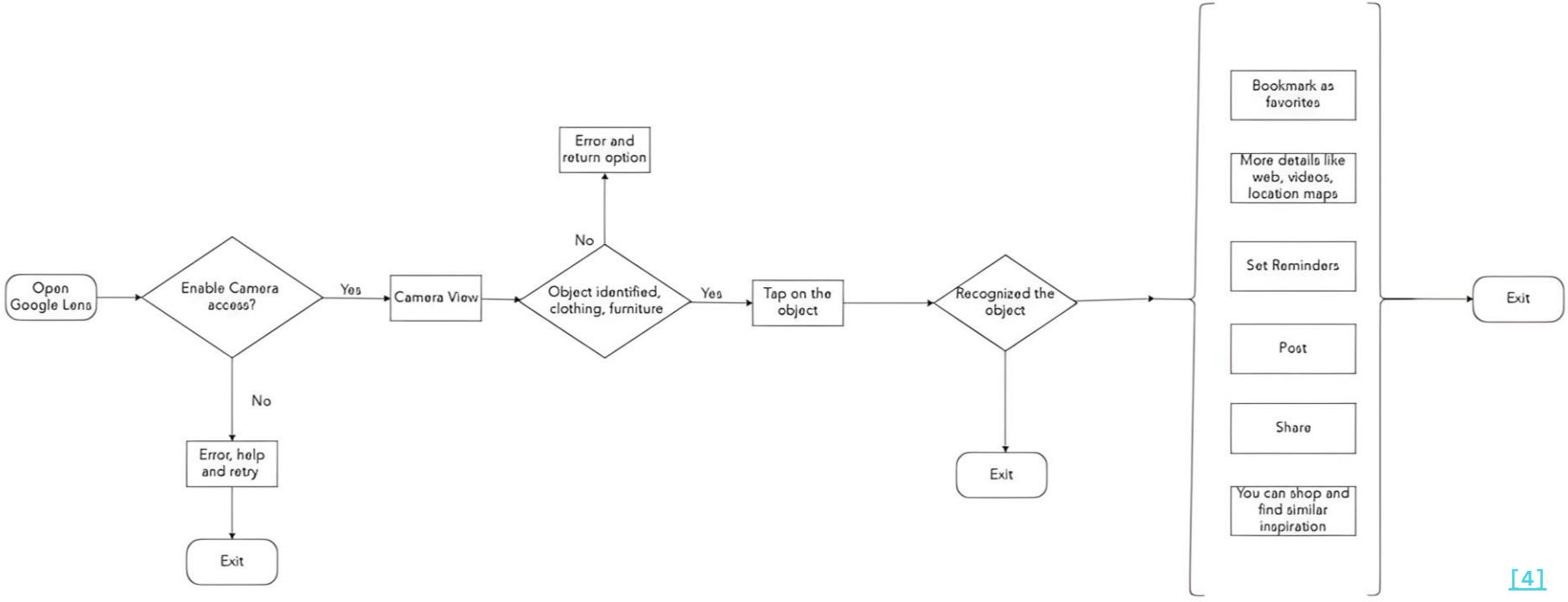
[3]



[4]

Flow Chart

Provided by Google Lens‘ UX Designer Shilpa Dakshinamurthy:



[4]

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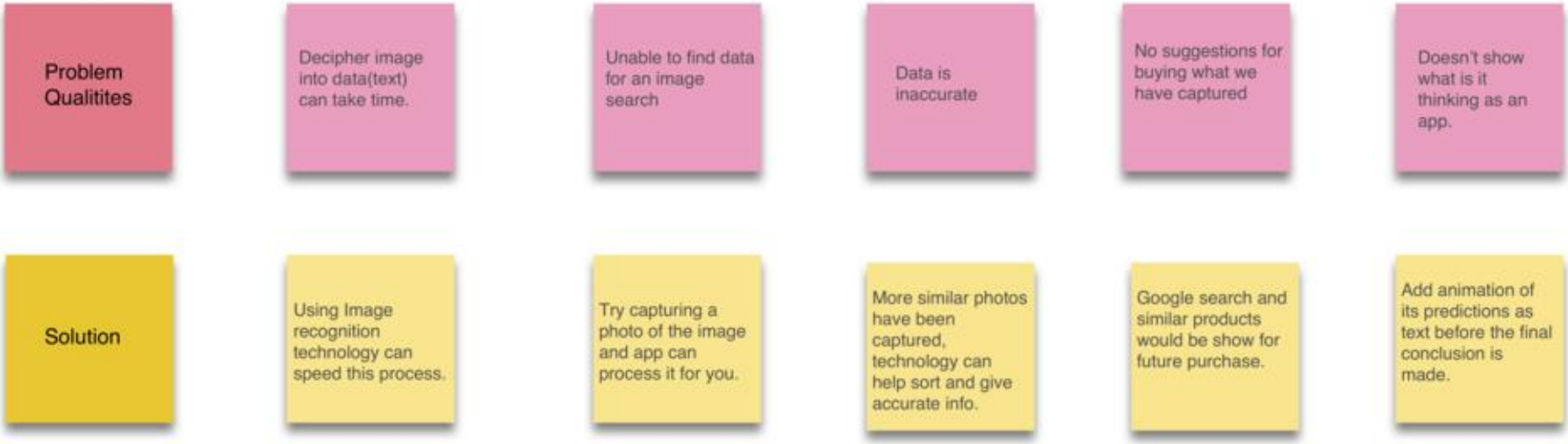
Useful infos beyond that

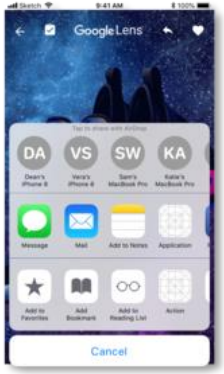
Google's market research + derived actions for Lens:

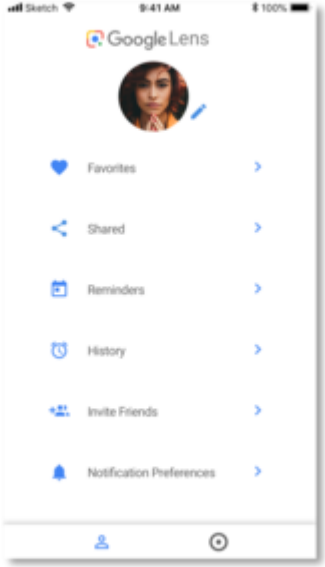


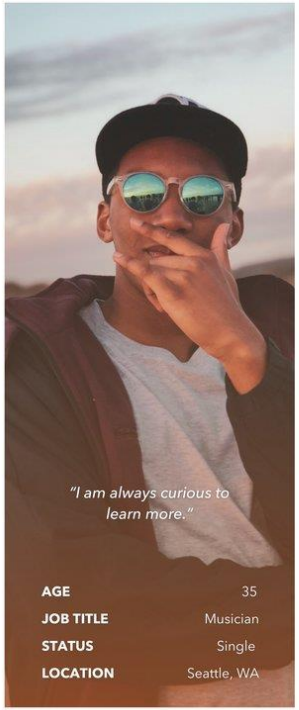
[4]

Useful infos beyond that

Google‘s focus on interconnecting Lens with communication apps:







#gamelover
#socialanimal
#technosavvy

USER PERSONA

Leon Holloway

ABOUT

Leon is musician playing drums. Loves his band group Zenith. He is soul searching for his purpose in life along side exploring and always curious to know more. He lives with his sister and spends his weekends with friends doing adventure sports.

PREFERENCES

Shopping
Console Games
Image recognition
Crowd
Pets

GOALS

- To be able to share something that I see and like with a picture, And get information about it on a app.
- Get recognized by many for my music and take Zentih to new heights.

PAIN POINTS

- There isn't an app that gives a visual search accurately (information of what they see).
- I saw a dog, but couldn't articulate to my my friend which breed it was.
- So many things that are visually pleasing to me , I wish I knew what they were.

KNOWN HABITS

- Always looks for Image recognition technology apps.
- There are none that gives accurate results and hard to trust.
- Always learning on google or reading a book to up his knowledge.

FAVORITE BRANDS

[4]

References

[1] - https://cdn2.hubspot.net/hubfs/2401279/Google%20IO%20May%202018%20Key%20Takeaways.pdf
[2] - https://www.nextpit.com/google-io-news-highlights#google-lens
[3] - https://patents.google.com/patent/US20170155850
[4] - https://www.shilpad.com/googlelens
[5] - https://www.linkedin.com/pulse/how-google-using-ai-computer-vision-lens-janak-sawale
[6] - https://analyticsindiamag.com/these-machine-learning-techniques-make-google-lens-a-success/
[7] - Ren, Shaoqing, et al. "Faster r-cnn: Towards real-time object detection with region proposal networks." (2015).