Cooper Nederhood, Liqiang Yu, Laurence Warner

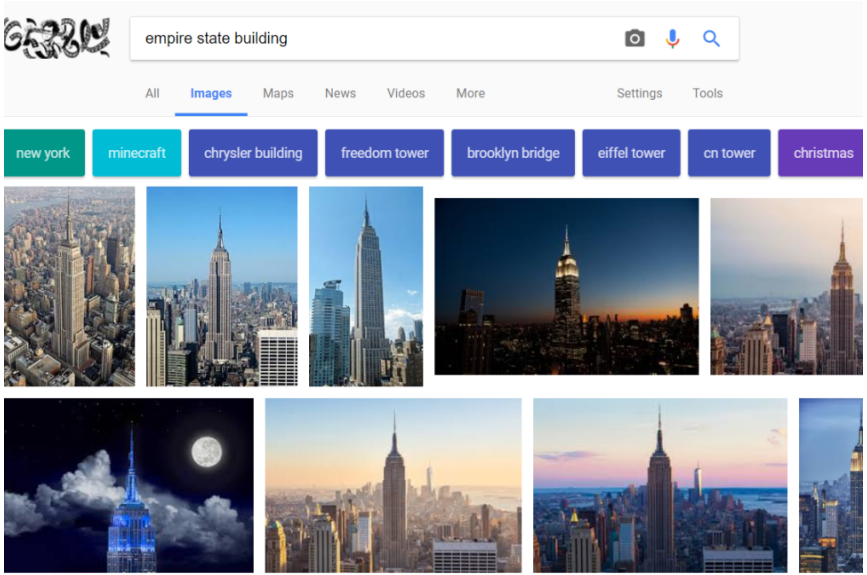
Data: National Historic Landmarks

- 2,596 across the United States by state (59 in Illinois)
- “Designed to recognize and honor the nation's cultural and historical heritage” (link)
- Diverse image type

[1]	Landmark name	Image	Date designated[2]	Location	County
1	Robert S. Abbott House		December 8, 1976 (#76000686)	Chicago 41°48′29″N 87°36′58″W	Cook
2	Adler Planetarium	More images	February 27, 1987 (#87000819)	Chicago 41°51′59″N 87°36′27″W	Cook
3	Auditorium Building	More images	May 15, 1975 (#70000230)	Chicago 41°52′33″N 87°37′28″W	Cook

Scraping images from Google Image search

- List by state with description from Wikipedia
- Download images from Google Image search (as many as possible)
- Training data and testing data
- Possible issue with request limit from Google Images



Algorithm

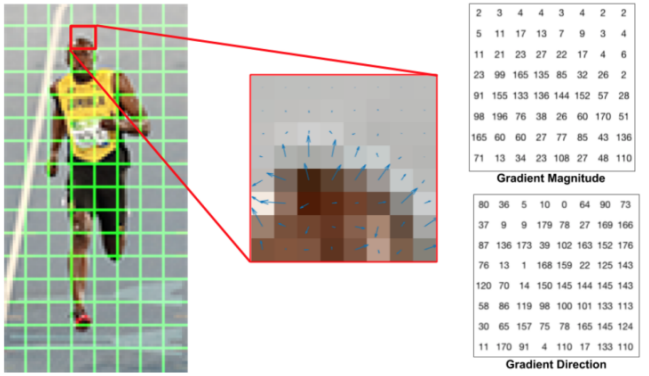
Goal

- Detection of object
- Invariant to lighting variation
- Recognition of landmarks

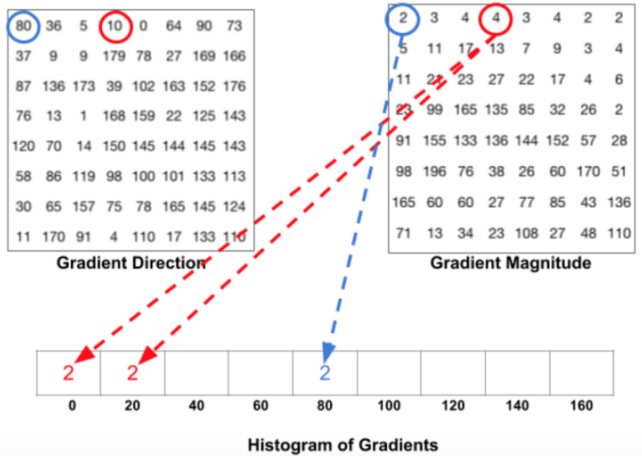
Algorithm

Solution

- Histogram of oriented gradients (HOG)
- Normalize
- SVM



Center : The RGB patch and gradients represented using arrows. Right : The gradients in the same patch represented as numbers



Ref: https://www.learnopencv.com/histogram-of-oriented-gradients/

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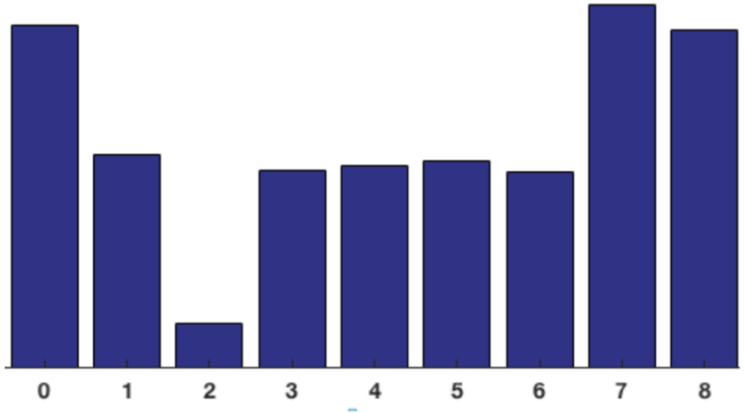

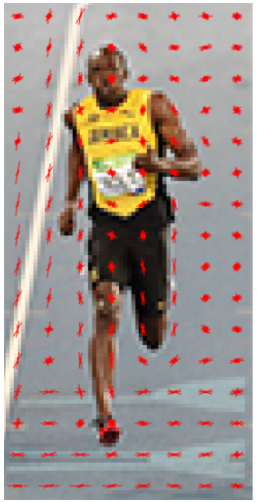

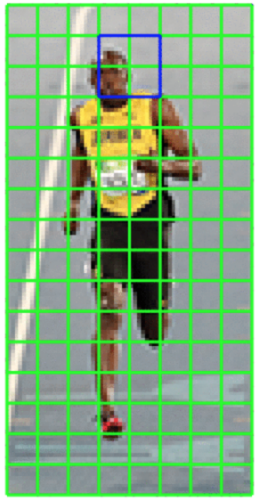

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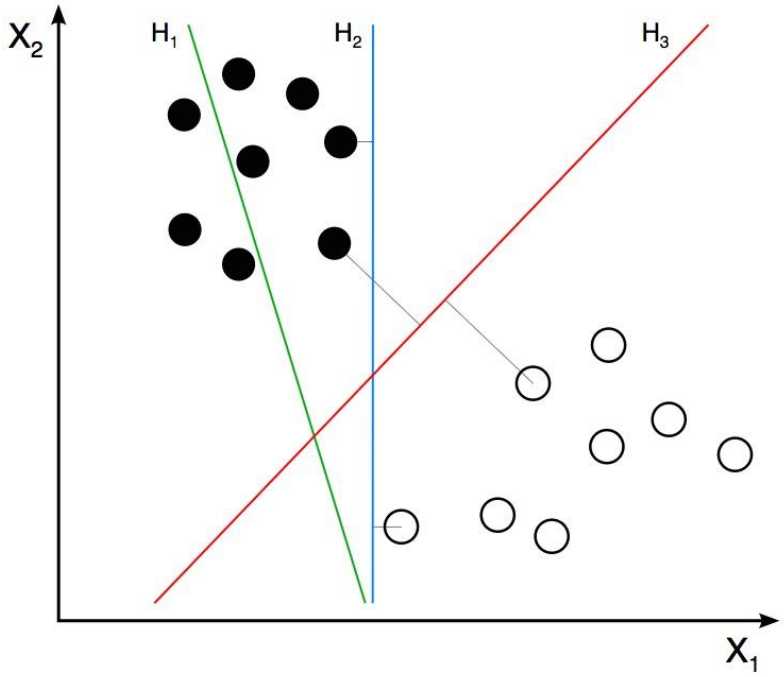

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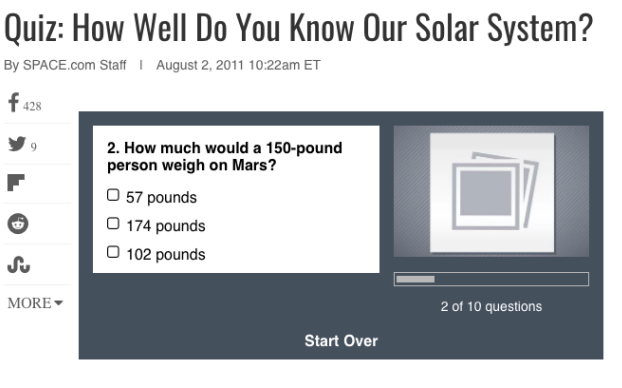
User Product: Think you know your state?

- Can you beat the algorithm?
- Potential to use platform to train new datasets

Similar example:



Questions for audience:

- How to build?
- App vs. website?

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Questions/Suggestions?