

Pinning Down Abuse on Google Maps

Univ of California, San Diego

Danny Y. Huang, Kirill Levchenko, Alex C. Snoeren

Google

Doug Grundman, Kurt Thomas,
Abhishek Kumar, Elie Bursztein

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Maps SEO is based on physical proximity

Traditional SEO

Ranked by relevance

Example: pharma

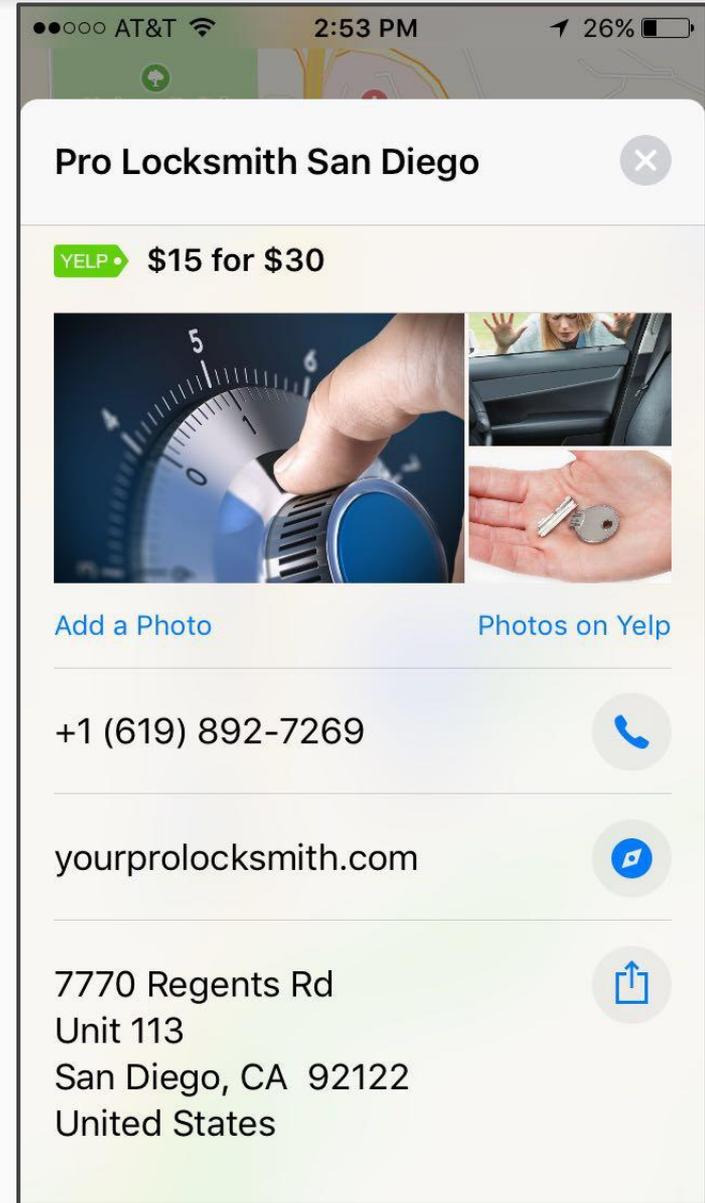
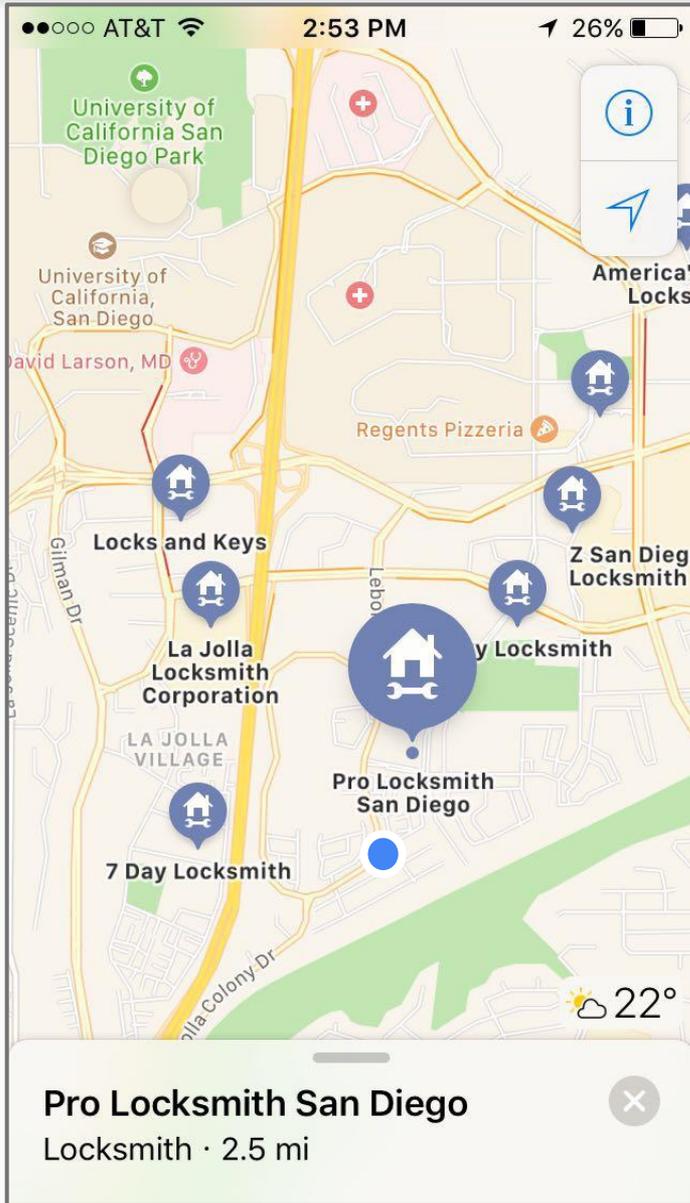
Maps SEO

Ranked by proximity

Example: locksmiths

How many and where?
How to make money?
How to evade detection?
Impact on users?

7 locksmiths near me



“Locksmith” located at UPS Store



Fake locksmiths are an old problem

The New York Times

Jan 2016

Fake Online Locksmiths May
Be Out to Pick Your Pocket, Too

False sense of proximity
Monetize from inferior service



Violation of ToS
Caused harm to users

Overview of abuse on Google Maps

Overview of abuse on Google Maps

Abusive listings
2014 - 2015

15% reached
users

Fake Locations (40%)

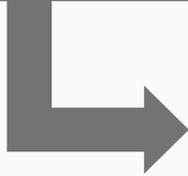
locksmiths, plumbers,
garage door openers

Affiliate Fraud (13%)

hotels, restaurants

Misc (47%)

Affiliate fraudsters hijack hotel listings



A screenshot of a hotel listing page. It features a large photo of a hotel room, a grid of smaller photos showing different views of the hotel, and a price tag starting from \$21 per night. A 'Book Now' button is visible. Below the photos, there is a disclaimer: 'It is the responsibility of the hotel chain and/or the individual property to ensure the accuracy of the photos displayed. 101hotel.co is not responsible for any inaccuracies in the photos'. At the bottom, there is a search bar with fields for Check-in (11 Jul 2015), Check-out (12 Jul 2015), Rooms (1), Adults (2), and Children (0), and a 'Search' button.



Reputable
travel agency

Paying for referral traffic
Damages to branding

How did scammers evade
Google's detection?

Creating a free listing on Google Maps

Google My Business > Add your business

Business name
Momo's Cafe

Country / Region
United States

Street address
1345 Shorebird Way

City
Mountain View

State
California

ZIP code
94043

Main business phone
555-555-5555

Category
Cafe

Cafe

Cafeteria

Internet Cafe



Verification via mail

Google My Business

Hello from Google,

The verification code that Danny Huang's Computer Repair requested from Google is below! Just follow the three steps below to finish verifying, and Danny Huang's Computer Repair will be open for business on Google.

Steps to verify your business:

- 1** Visit google.com/verifymybusiness
- 2** Sign in to your Google account.
- 3** Enter your verification code and submit!

Your verification code:

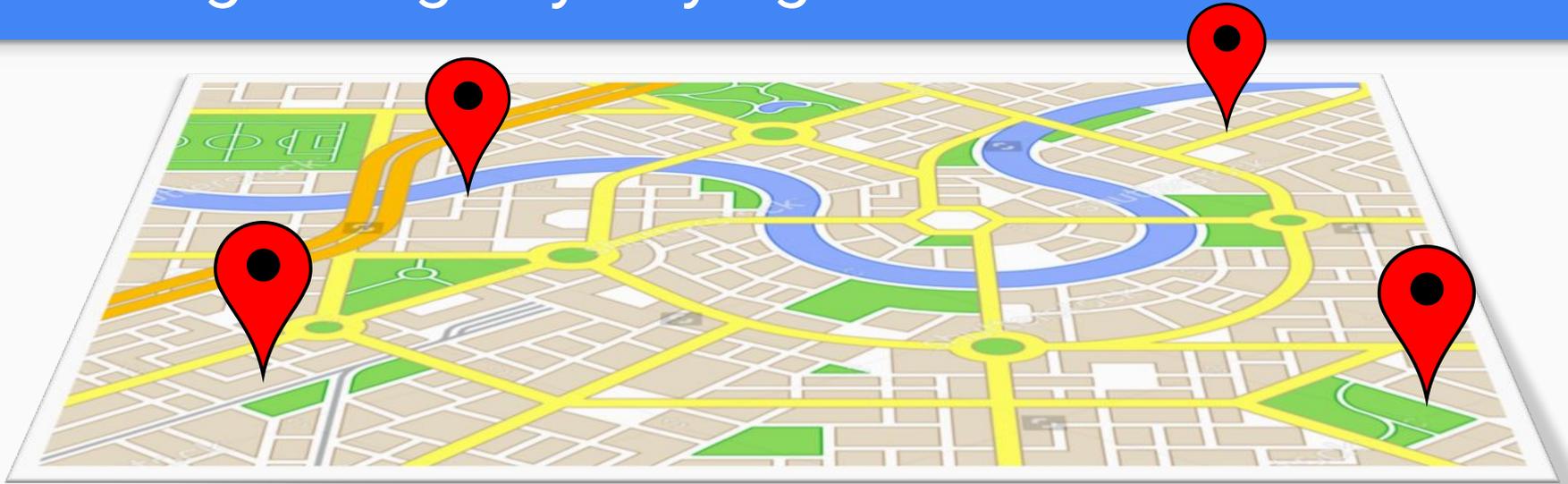
23284

This code is unique to your business account and the particular listing you want to verify. Please do not share this code with anyone else, and know that Google will never call your business and ask for your code.

Need help? Visit us at google.com/supportmybusiness to learn more.

80% abusive listings verified through mail

Creating listings by buying fake locations



Residential



Commercial

Verifying listings using the same address

Impose a
cutoff?

123 Main St

123 Main St Suite 456

123 Main St #456

#456 123 Main St

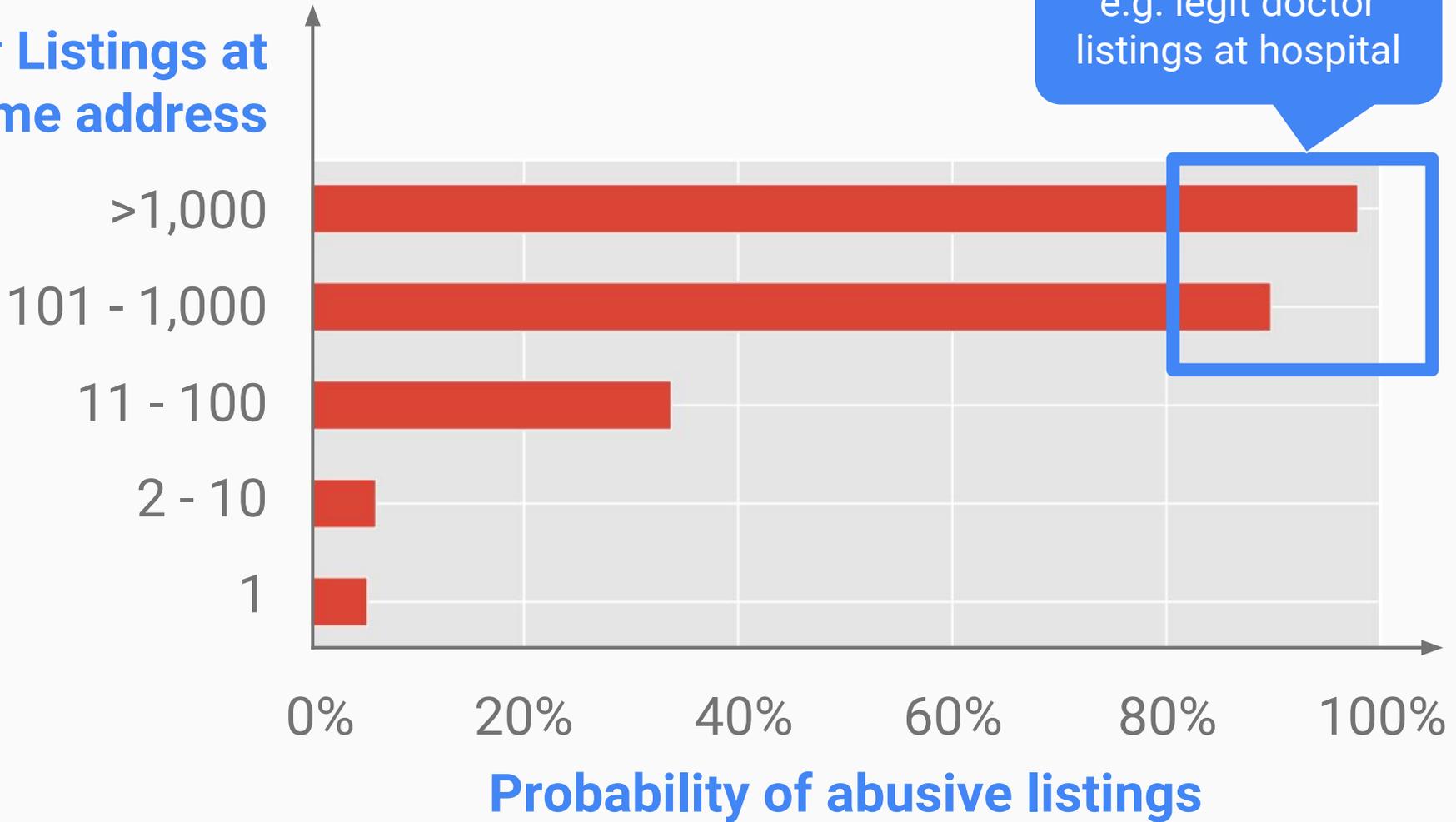
!23 Main St

Verify multiple listings

25% of abusive listings
used this trick

Abusive listings verified at the same address

Listings at same address



e.g. legit doctor listings at hospital

Impact on end users?

Quantifying impact on users

$$\frac{\text{\# of abusive search results}}{\text{\# of search results}}$$

Locksmiths^{*}

11%

Search results that are abusive

Locksmiths

11%

New York, NY

16%

West Harrison, NY*

84%

Plumbers, etc

0.4%

Restaurants

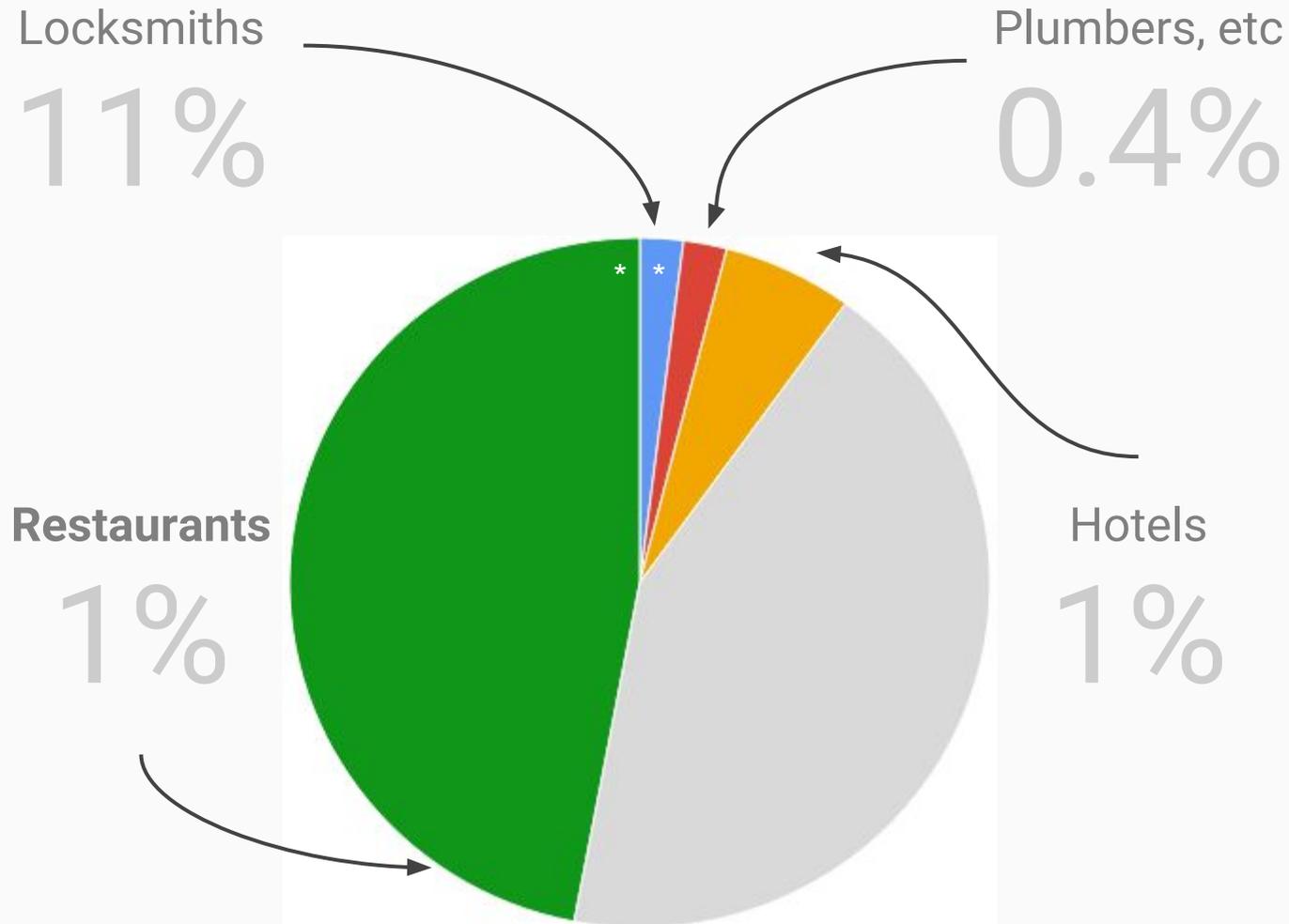
1%

Hotels

1%

* 84% of search results for locksmiths in West Harrison, NY were abusive during our analysis period.

Pie chart: abusive results that are restaurants



* For every 100 random abusive search results in the US, 2 were abusive locksmiths, while 47 were abusive restaurants.

Overall search results that are abusive

Locksmiths

11%

Plumbers, etc

0.4%

0.5%

of search results in US were abusive*

Restaurants

1%

Hotels

1%

Summary

SEO based on physical proximity

Fake locations vs affiliate fraud

Hard to verify addresses at scale

Improved defenses by Google;
abusive listings down by 70% from peak

Thank you!

More info: <http://sysnet.ucsd.edu/~dhuang/>

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