Facebook “Like”
YouTube “Thumbs-Up”

PSY - GANGNAM STYLE (강남스타일) M/V

officialpsy

Subscribe 7,937,308

9,373,248 1,257,141
Google+ “+1”

About the +1 button

+1 is how you signal your appreciation for anything that grabs your attention. When you read a post that makes you want to cheer, +1 is your +1. When you see a photo that perfectly captures a moment, +1 is your laughter; when you see a photo that perfectly captures a moment, +1 is your +1.

+1's on Google+

When you +1 a post on Google+, other people who can see your +1. The creator of the post will be notified via email. If the post was shared with circles, they may also see your +1. To remove your +1, just click the button.
Twitter “Favorite”

I Like To Make Stuff
@iliketomakestuff
Maker/Dad/Musician/Runner/etc/etc/etc I make free how-to content
Savannah, GA
iliketomakestuff.com
Joined January 2009

319 Photos and videos

Tweets

If you see me at #makerfaire2015 ask me for a sticker!! #iltms #iliketomakestuff

TWEETS FOLLOWING FOLLOWERS FAVORITES LISTS
2,876 182 2,701 1,686 1
Reddit “Upvote”
The Generation “LIKE”
Likes in Social Media

- Universal activities in Social Media
  - More than simple “views”
  - Personal preference & endorsement
- Do **not** require a pre-existing interpersonal relationship
Values of Likes

- **Binary**: \{0, 1\}
  - Facebook LIKE
  - Google+ +1
  - Flickr favorite

- **Ternary**
  - Reddit Votes: \{+1, -1, 0\}
  - YouTube \{Thumbs-Up, Thumbs-Down, None\}

- **N-ary**
  - YouTube “Like” used to be \([1..5]\) (until 2010) then changed to ternary
  - E-Commerce ratings (eg, Amazon, Yelp)
Fake Likes

- People buy and sell Likes
- Huge commercial implications
- Headache for SNS to maintain healthy ecosystem

Breaking new Ground in the Fight Against Fake Likes

Keeping activity authentic on Facebook is an important part of our ongoing efforts to make sure Facebook is a trustworthy place for people and businesses to connect. Last October we shared some of the ways we work to stop fraudulent activity on Facebook, particularly around fighting fake likes. We’ve made big strides in the past six months, so today we’re providing an update on our progress in this area.
I will give you 600 real and permanent Facebook page like with 2 split

1 Orders in Queue

Digital Marketing / Social Media Marketing

100% Safe & Reliable

600+ REAL FACEBOOK LIKES

Fanpage/Post Likes

24 hours delivery
GET HIGH QUALITY LIKES FROM THE WHOLE PLANET!

LikesPlanet is the best way to advertise your social pages.

131,831,980 Hits/likes delivered
367,956 Members and counting!

245 Members joined in the last 24 hours!
1,062 Online!
Uncover Fake Likers

- Detecting fake Likes is ideal
  - What are Fake Likes? ~ meaning of “Likes”?  
  - Virtually impossible

- Instead, detect fake Likers and remove their Likes
  - May have false positives

- Supervised learning approach
  - Gather labeled positive/negative samples
  - Learn supervised learning models
  - Apply the built models to users to classify
    - {Legit-user, Fake-user}
Data Collection

1. Broker-Initiated Market
   - fiverr
   - SELLERS
   - Page Likes GIG
   - BUY
   - Authors
   - Crowd Network
   - Assigns Task
   - Give Likes
   - Facebook Honeypot Pages

2. Buyer-Initiated Market
   - microWorkers
   - Like us on Facebook
   - Task Owners
   - Post
   - Crowd Workers
   - Likes

3. Conference and Research Groups on Facebook
   - Extract Facebook Profile Links
   - Authors

4. Legit Likers
   - CRAWLER
   - Extract Facebook Profile Links
   - Facebook User Data
   - Facebook Friends Network

Fake Likers

Market
Buyer-Initiated Market
Broker-Initiated Market
People who like Risk Board Game

Aditya Singh
Likes Risk Board Game

Haneen Uwk
Likes Risk Board Game

Wahy Zekryat
Likes Risk Board Game, NeverKnew and 21 others

Nesso Mahlawy
Narmer Language School
Likes Risk Board Game, Clash of Queens and 5 others
Went to Narmer Language School

This is not a real page, please do not like this page.
2-hop Friendship among Fake Likers

- Fiverr
  - Clustering Coefficient: 0.233

- Microworker
  - Clustering Coefficient: 0.612
Feature Engineering

- 4 groups of features
  - Profile features
  - Posting activity features
  - Page liking features
  - Social attention features

Top-5 features according to Chi-Square value

<table>
<thead>
<tr>
<th>Feature</th>
<th>Fake Liker</th>
<th>Legit Liker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category entropy</td>
<td>6.35</td>
<td>4.47</td>
</tr>
<tr>
<td>Longevity</td>
<td>3.62</td>
<td>5.53</td>
</tr>
<tr>
<td>Length of profile</td>
<td>4.02</td>
<td>4.08</td>
</tr>
<tr>
<td># posts / day</td>
<td>0.31</td>
<td>0.12</td>
</tr>
<tr>
<td># of verified page</td>
<td>0.23</td>
<td>0.26</td>
</tr>
</tbody>
</table>
Our Results

Balanced dataset

|Fake Likers| = 6,895
|Legit Likers| = 6,252
Beyond the Detection

- Current thesis
  - Fake activities occur → Detect and fix them!
- Q: Can we deter the creation of fake Likes in the first place?
  - More proactive solution

Main Ideas
- **Increase** costs for fake Likers to add *fake* Likes
- **Minimize** costs for honest Likers to add *legit* Likes