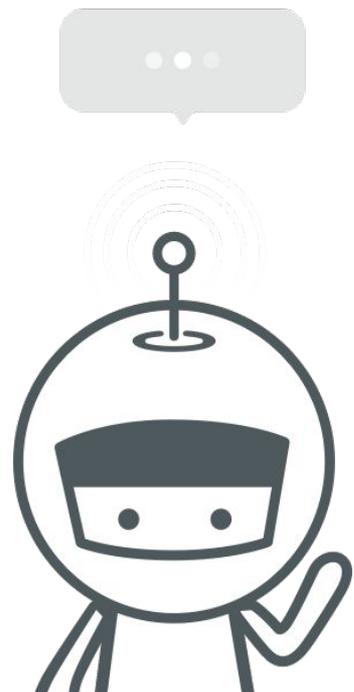


# marsbot.

Hey there! I'm Marsbot.



Foursquare's New Recommendation Bot  
Talkabot Conference, Austin, TX  
September 29, 2016  
Max Sklar, @maxsklar

**Why are we building  
bots?**

# Why a bot?



## The State of the Union

**12**

Used  
Daily

**3**

80% of  
Usage

**0**

Added  
Monthly



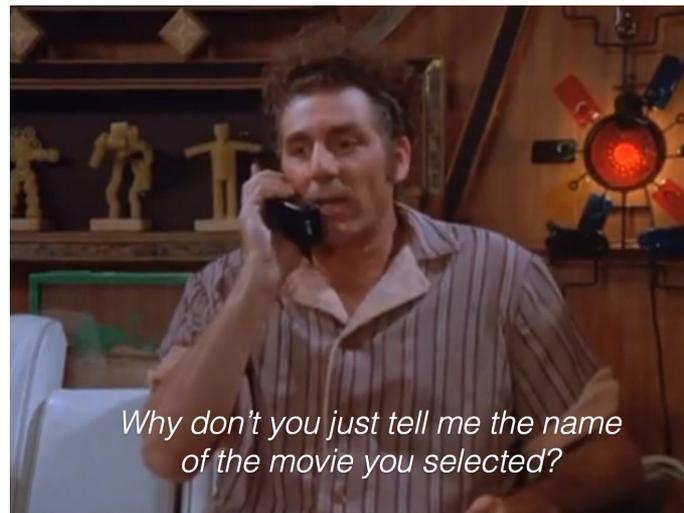
1. Bots are a huge **growth** opportunity



2. Bots can offer a seamless **user experience**



3. Bots can form **emotional connections** with users



*Why don't you just tell me the name of the movie you selected?*

**Some questions that will keep bot makers  
up at night:**

# Some questions that will keep bot makers up at night:

- What are people getting out of my chatbot? Will they actually want to use it?

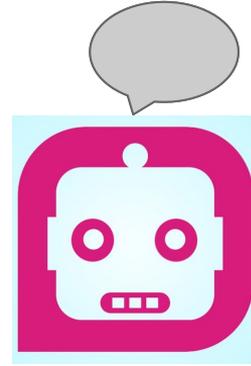
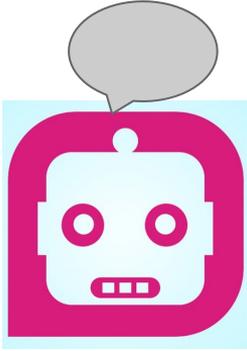
# Some questions that will keep bot makers up at night:

- What are people getting out of my chatbot? Will they actually want to use it?
- Will they remember to use it when they need it?

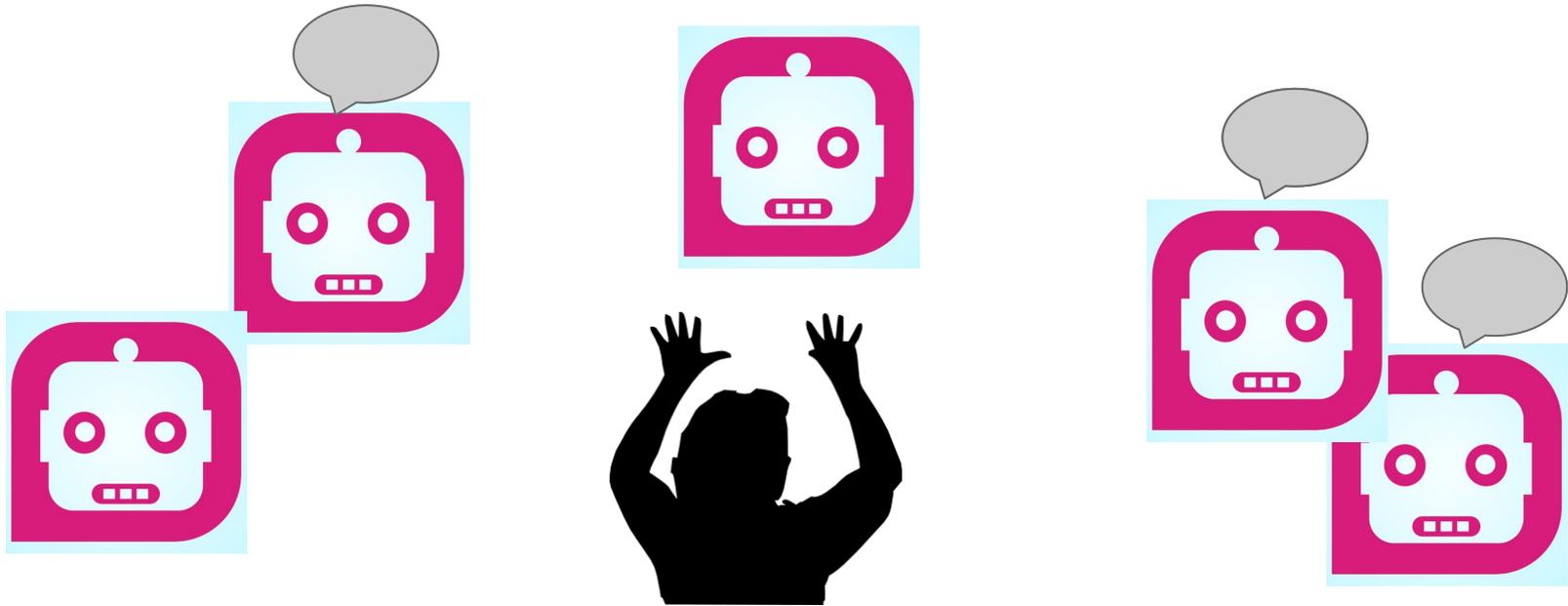
# Some questions that will keep bot makers up at night:

- What are people getting out of my chatbot? Will they actually want to use it?
- Will they remember to use it when they need it?
- Will they get annoyed if we remind them to use it when they need it?

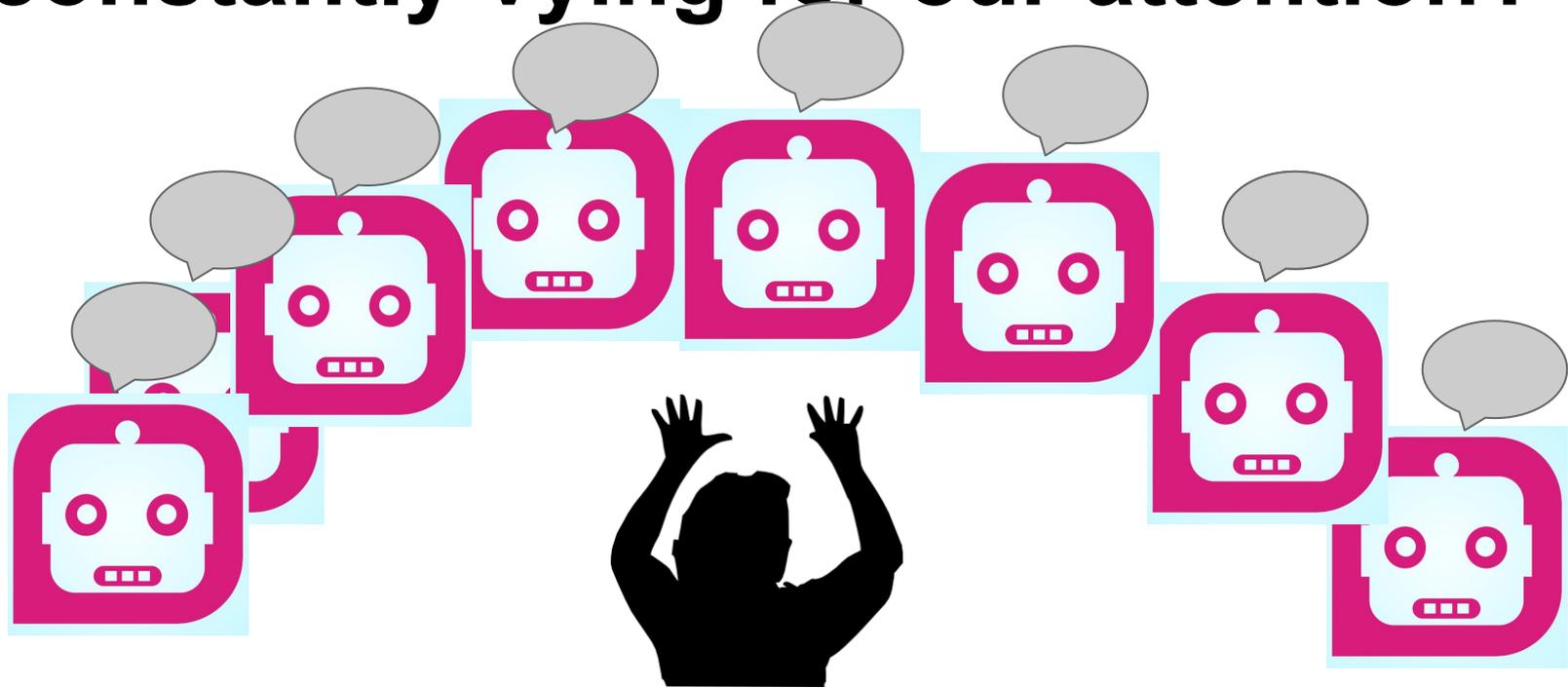
**Do we want to live in a world where  
hundreds of needy bots are  
constantly vying for our attention?**



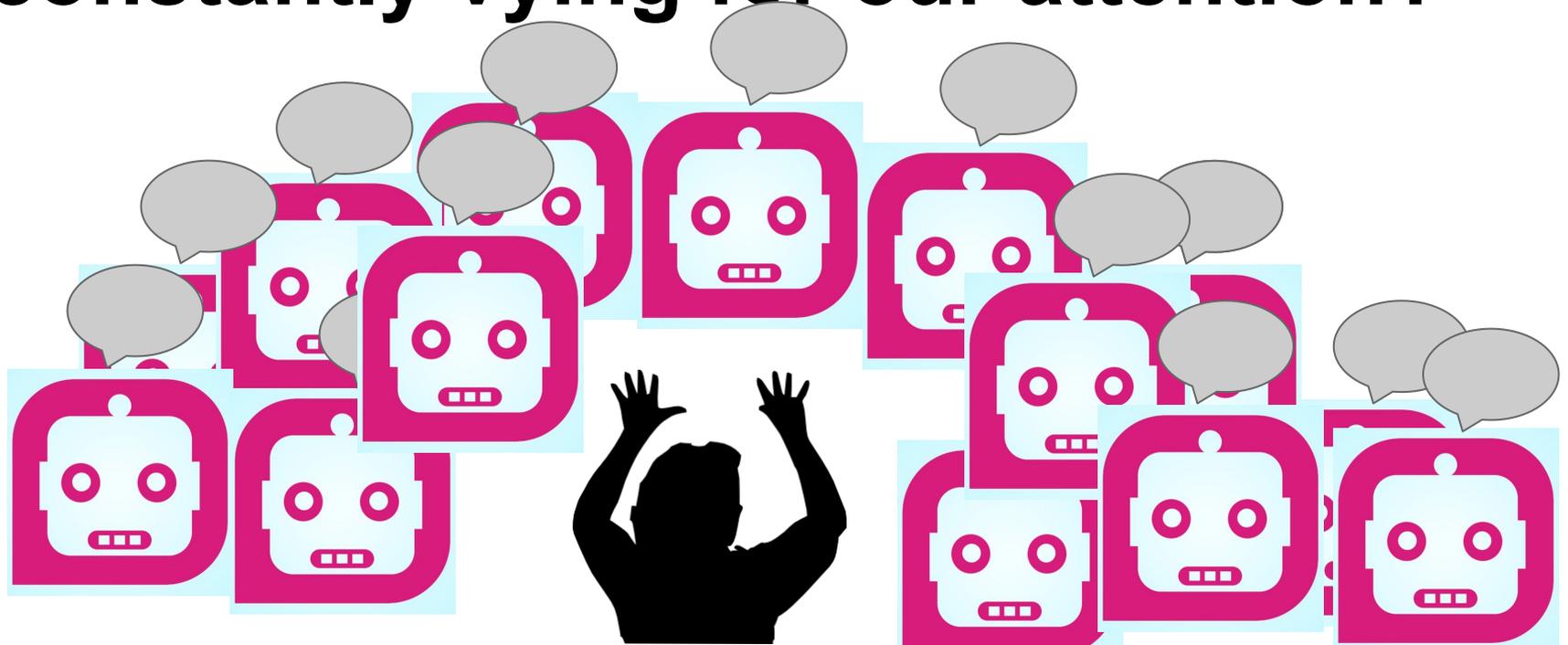
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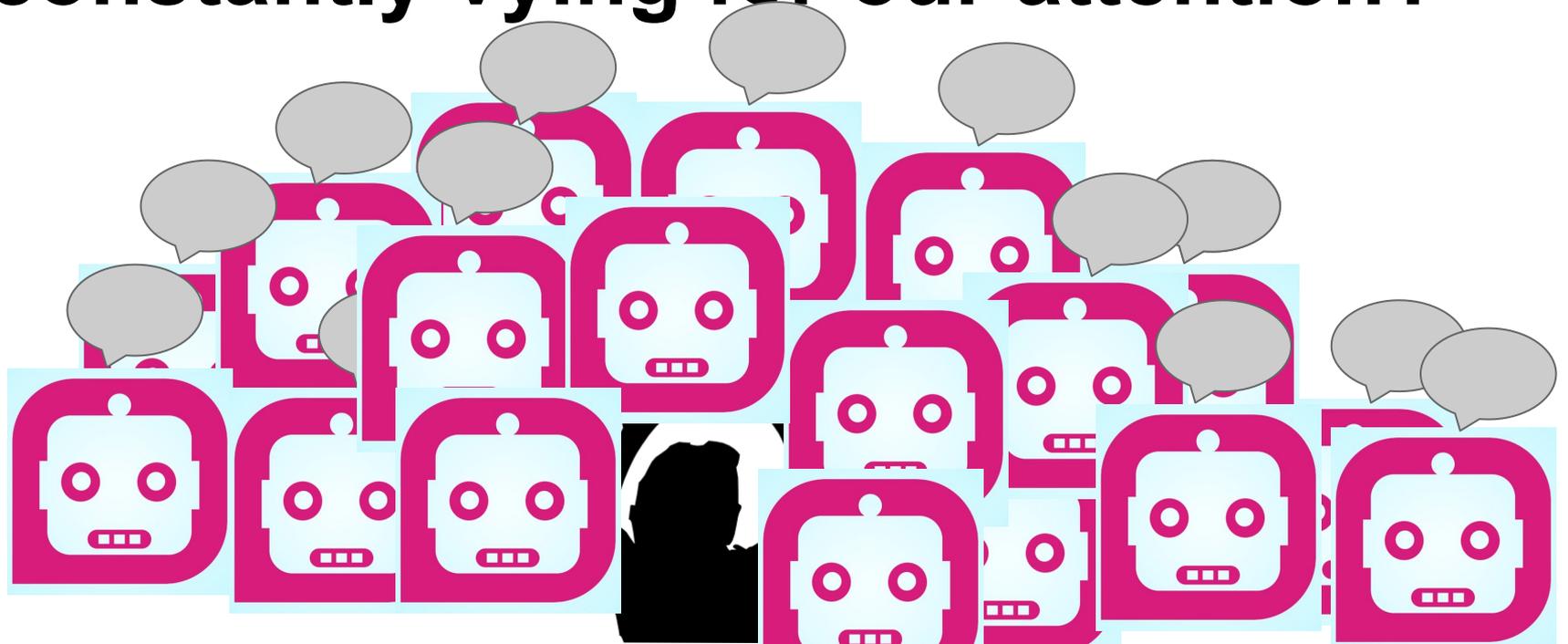
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**Do we want to live in a world where  
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**Do we want to live in a world where hundreds of needy bots are constantly vying for our attention?**



# But what do we really want to build?

- A bot that know you and looks out for your interests.
- A bot that wakes up at just the right time and can help you in some way
- A bot that works in a specific domain and knows it very well.

We didn't want to create a *Chat Bot* to endlessly answer your questions. We wanted to create a *Context Bot*—one that can understand where you're standing, learn from the places you've been, and predict what you may want to do next.



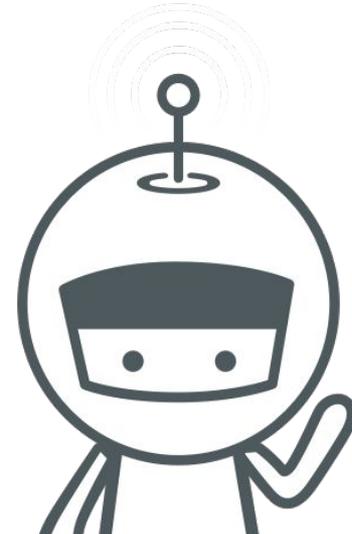
Marsbot. (aka: some thoughts on the types of t...  
Dennis Crowley in Foursquare Direct



# Marsbot: An SMS-Based Personality for Local Recommendations

Marsbot is a character in your pocket that learns your daily habits and routines, uses that to build a profile of you and texts you local recommendations.

Hey there! I'm Marsbot.

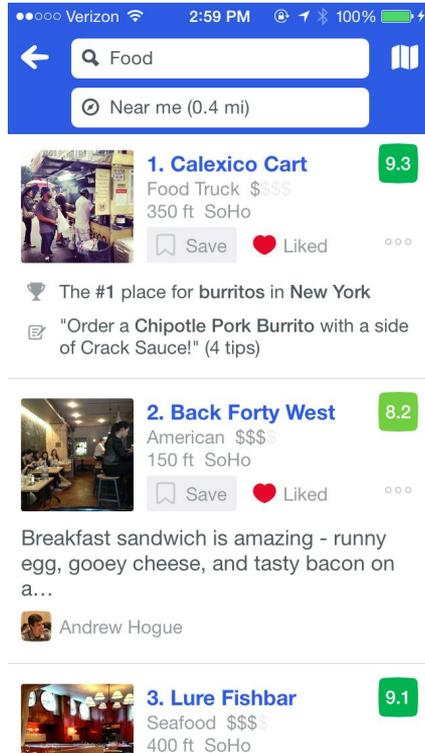


# Leveraging Existing Technology



Fortunately, we were sitting on 6 years of product building and machine learning to make this possible with our Foursquare recommendation engine.

# Personalized Search



Verizon 2:59 PM 100%

Food

Near me (0.4 mi)

**1. Calexico Cart** 9.3  
Food Truck \$\$\$  
350 ft SoHo  
Save Liked

The #1 place for burritos in New York

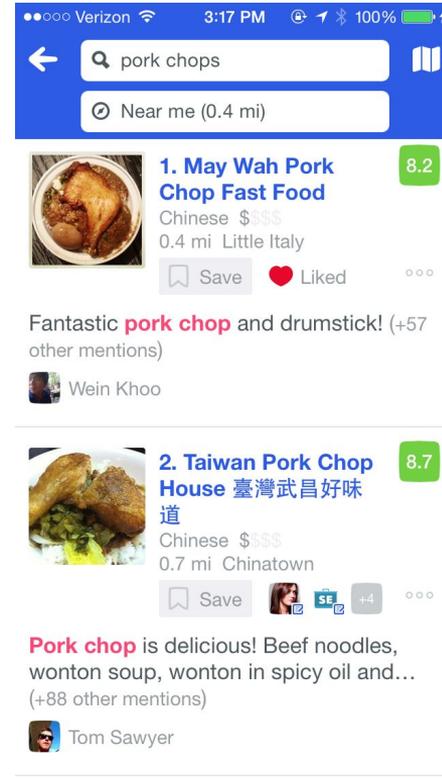
"Order a Chipotle Pork Burrito with a side of Crack Sauce!" (4 tips)

**2. Back Forty West** 8.2  
American \$\$\$  
150 ft SoHo  
Save Liked

Breakfast sandwich is amazing - runny egg, gooey cheese, and tasty bacon on a...

Andrew Hogue

**3. Lure Fishbar** 9.1  
Seafood \$\$\$  
400 ft SoHo



Verizon 3:17 PM 100%

pork chops

Near me (0.4 mi)

**1. May Wah Pork Chop Fast Food** 8.2  
Chinese \$\$\$  
0.4 mi Little Italy  
Save Liked

Fantastic **pork chop** and drumstick! (+57 other mentions)

Wein Khoo

**2. Taiwan Pork Chop House** 8.7  
Chinese \$\$\$  
0.7 mi Chinatown  
Save +4

**Pork chop** is delicious! Beef noodles, wonton soup, wonton in spicy oil and... (+88 other mentions)

Tom Sawyer

## KNN-based Venue Map

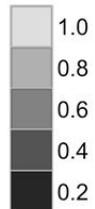


# Venue Shapes + Stop Detection

### Venue

- Washington Square Park
- Otto Enoteca Pizzeria
- NYU Stern School of Business
- NYU Silver Center for Arts and Science
- NYU Bobst Library

### Probability



# Sentiment Analysis

2012-02-07	8674249	LIKE	0.96	0.028	0.010	en	They're open until 4 am! Try the veggie platter!	5.0
2011-04-14	8558629	AVERAGE	0.87	0.089	0.038	en	They're open 24/7 - turn up after your night out and partake of the pierogis with applesauce.	1.7
2012-12-23	8982367	AVERAGE	0.89	0.079	0.030	en	They have sweet potato fries. Order them.	2.4
2015-08-05	122363534	NONE	0.90	0.044	0.060	en	These short rib pierogies are fire.	1.3
2011-10-25	1963365	NONE	0.81	0.055	0.13	en	These fuckers now have a \$5 minimum per seat. They won't be getting my business anymore, on principle alone.	-4.8
2015-11-03	2978340	LIKE	0.97	0.024	0.0057	en	Their pancakes are awesome! Forgo the sausage and get their delicious thick cut bacon instead.	7.6
2010-09-02	427291	NONE	0.90	0.048	0.050	en	Their milkshake brings all the boys to the yard. I shouldn't have to say "chocolate."	9.2
2011-02-20	3567511	NONE	0.94	0.033	0.028	en	Their matzo ball soup? Best EVER.	3.2
2015-02-18	119125357	NONE	0.92	0.060	0.023	en	Their chicken noodle soup is great. And what is this salad dressing?! I don't know what's in it, but also great.	5.0
2014-01-25	27414126	NONE	0.90	0.058	0.045	en	Their borsch is a revelation. A very welcome one.	10
2014-12-31	95674581	NONE	0.91	0.049	0.039	en	The. Best.	-0.086
2013-02-23	8920582	DISLIKE	0.44	0.19	0.38	en	The wait staff is excessively pushy - they tried to take my bowl of soup away 5 times before I was finished.	7.9
2010-10-10	23789	AVERAGE	0.83	0.13	0.039	en	The vegetarian borsch is incredible. Mac n cheese is just ok.	13
2011-10-02	53020	LIKE	0.98	0.021	0.0026	en	The vegetarian Borscht is amazing. Get it if you're under the weather or just want to eat something comforting.	11
2010-07-10	660680	LIKE	0.96	0.036	0.0051	en	The vegetable soup is the best soup they have. The dill in the soup is a pleasant surprise.	9.7
2015-11-17	137415058	NONE	0.92	0.042	0.039	en	The stuffed cabbage took the spot light on my deluxe meat plate for sure!!	3.4
2013-07-20	60080	LIKE	0.90	0.044	0.0007	en	The split pea soup is amazing! D	0.04

# Ratings



## 1. US Post Office

Post Office

335 E 14th St (btwn 1st & 2nd Ave), New York

Save



have been here

4.2



Jen B. • December 19, 2011

The week before Christmas and they don't open the service windows until 9am? Really?? People just hanging out behind counter as the line multiplies. Never again.



## 1. Breads Bakery

Bakery • \$\$\$ • View Menu

18 E 16th St (btwn Union Sq W & 5th Ave), New York

Save



+22

9.5

"Just had a sample of their **chocolate babka** loaf & it's to die for!" (49 tips)



## 16. Chop't

Salad • \$\$-\$\$ • View Menu

24 E 17th St (at Broadway), New York

Save



+10

8.3

"Try the **Mexican Caesar**, Steak House, & Po'Boy salad - I have never..." (5 tips)



## 27. Potbelly Sandwich Shop

Sandwiches • \$\$\$ • View Menu

22 E 17th St, New York

Save



+4

7.6

"Get the **wrecking ball**... Shh!" (4 tips)



## 1. TGI Fridays

American • \$\$\$

34 Union Sq E, New York

Save



have been here

5.1



Märlënë B. • May 18, 2014

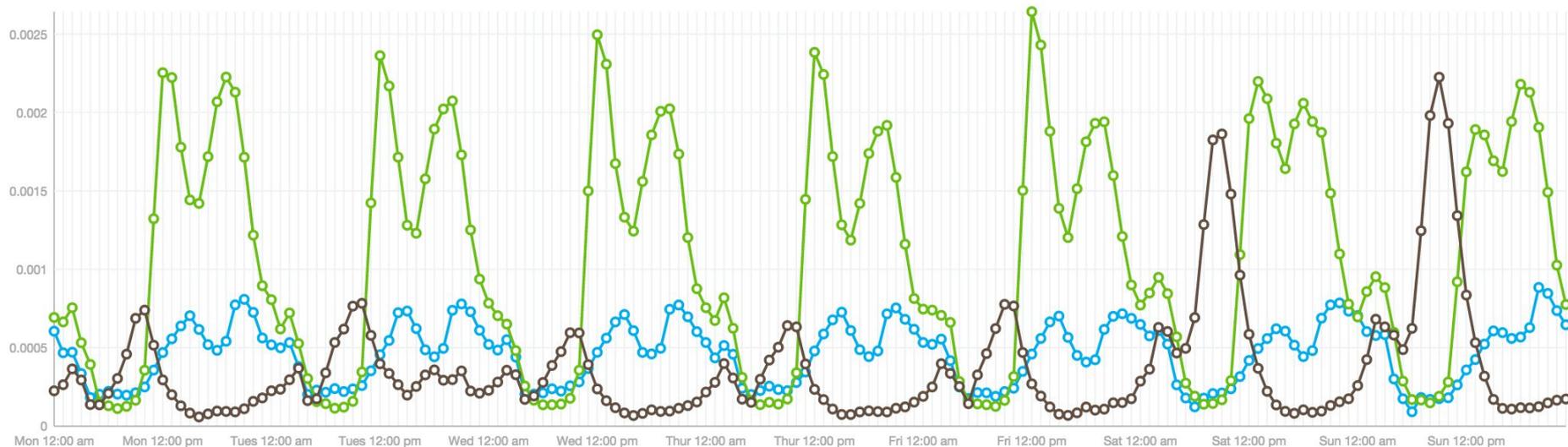
Best strawberry basil margarita tequila

# Timeliness and Seasonality



## Normalized Counts

Total number of shout mentions with the phrase / Total shouts in the language



milkshake (en) burger (en) pancakes (en)  
United States United States United States

# Back to Marsbot



**marsbot.**

The bot that recommends great restaurants & nightlife by learning from the places you go

Marsbot helps you discover new places by learning what you like and then sending you recommendations via SMS. Marsbot quietly pays attention to the places you bring your phone, learns about the types of places you like to go, and then texts you with suggestions about great places to eat and drink that are worth seeking out nearby.





## Bot Engagement

~ 90%

Open Rates

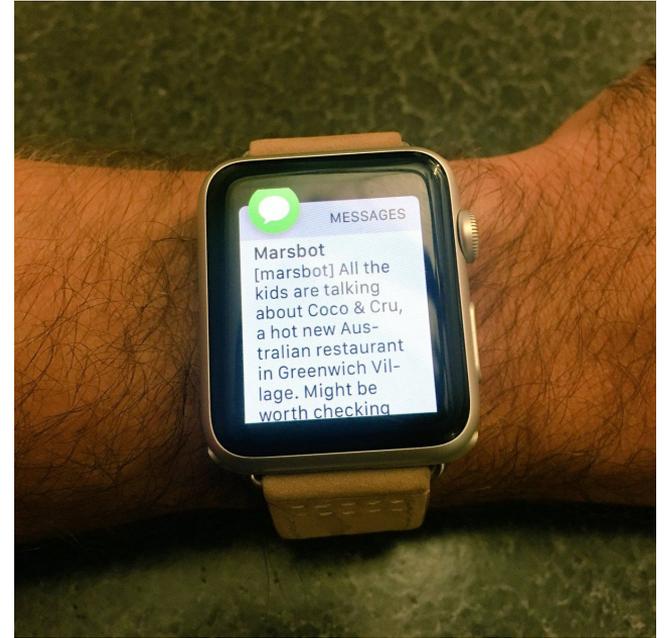
~ 30%

CTRs

# Example of a push recommendations:

Wed, Jun 1, 11:47 AM

[marsbot] After a meal at La Bagel Delight, some people like to grab a cup of coffee at Hungry Ghost nearby.  
(<http://4sq.com/1T3aHzj>)



# Training the bot passively

Monday 12:42 PM

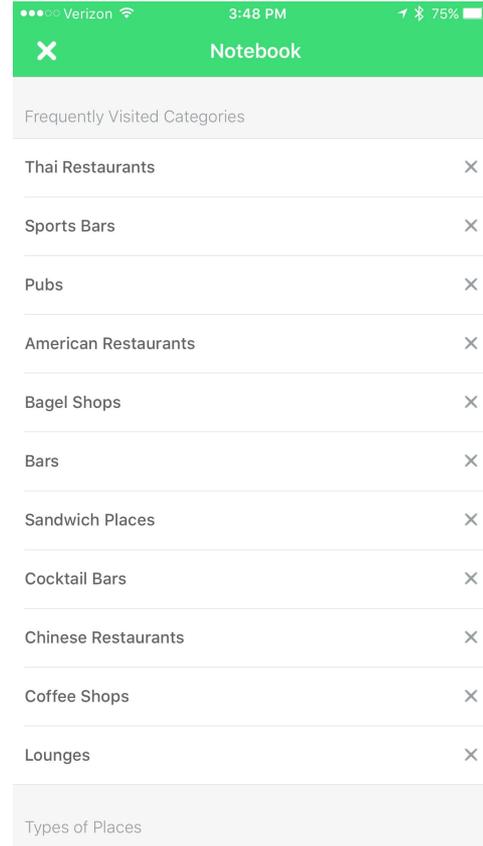
[marsbot] Looks like you're at Kelley & Ping, and I couldn't help but notice you might have been to National Thai Restaurant before. Do you want me to keep looking out for great Thai restaurants? Just reply YES, otherwise reply NO.

Yes

[marsbot] 📄 Thanks, I'll be sure to tell you about any Thai restaurants that I find.

# Personalization

You can correct Marsbot in the app, but you don't need to!



# Personality



**Gary Riley**  
@overshare



Follow

"We should check it out sometime!" -I think @marsbotapp just asked me out on a date

[marsbot] Hey Gary, I just heard about Tawla and thought you might like it. It's a recently opened Middle Eastern restaurant in Mission District. (<http://4sq.com/299dBjW>), we should check it out some time!



# Text Directly for Recommendations

Possible Product Direction:  
Like having a conversation with a friend

Find Mexican food

[marsbot] Try Cafe Habana (<http://4sq.com/1ZLFSiK>), a wonderful Cuban restaurant nearby.

Closer

Find 🍔

[marsbot] I would recommend Casino El Camino (<http://4sq.com/2dBow9Q>). It's in Downtown Austin and a cool dive bar. One of the top 5 places for burgers in Austin

[marsbot] Maybe check out Mexican Radio. (<http://4sq.com/1twVxs2>) My sources tell me it's a cool Mexican restaurant and located in SoHo. It's closer than Cafe Habana at 0.2 miles away.

# Text Directly for Recommendations

Very simple text interpretation engine.

Pointing users in the right direction.

Hi marsbot

[marsbot] Hey Max! If you want to find a place to go now, just text me "Find" plus what you are in the mood for. Like "find tacos in Tribeca".

Thanks!

[marsbot] No problem 😎

# Give it a try!

iOS available now, Android coming soon.

The future of this story is yet unwritten...

Questions?

@maxsklar

