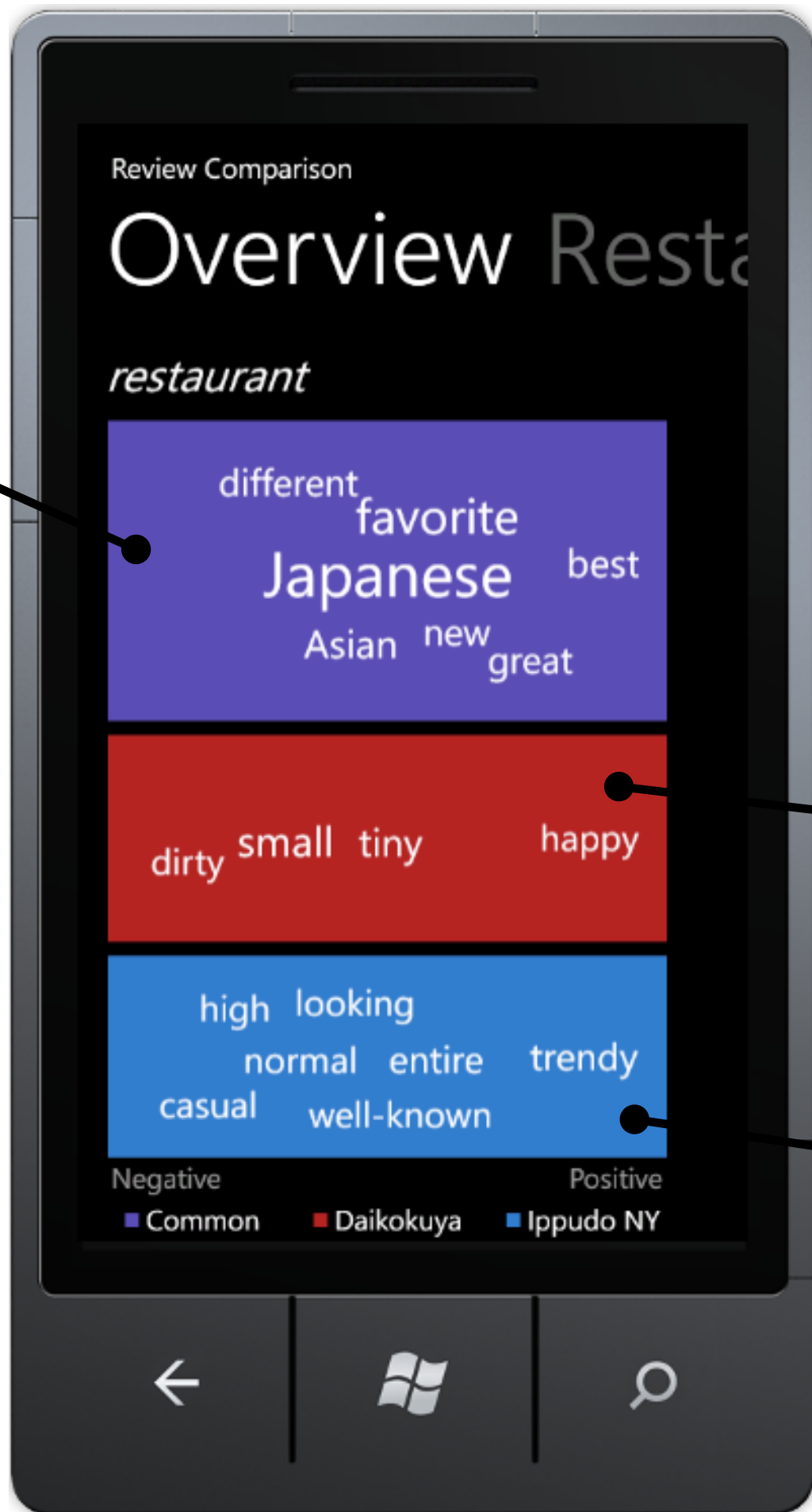


ReviewCollage:

A Mobile Interface for Direct Comparison Using Online Reviews

Common




Daikokuya


Ippudo

Haojian Jin
Tetsuya Sakai
Koji Yatani


- Yahoo! Labs
- Waseda Univ.
- Univ. of Tokyo




Let's see if I can find
a good place to eat.



Whoa, how do ALL of
these places have four
or five stars???

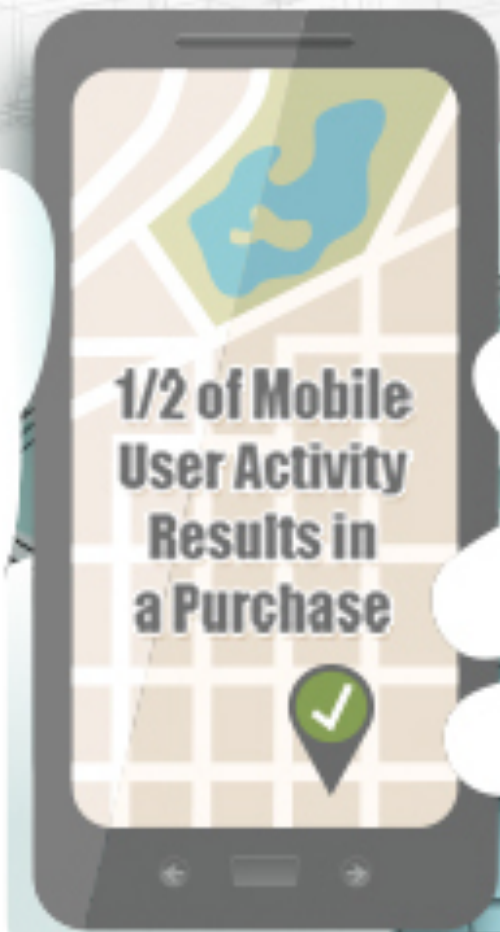


Either all the food
around here is amazing.

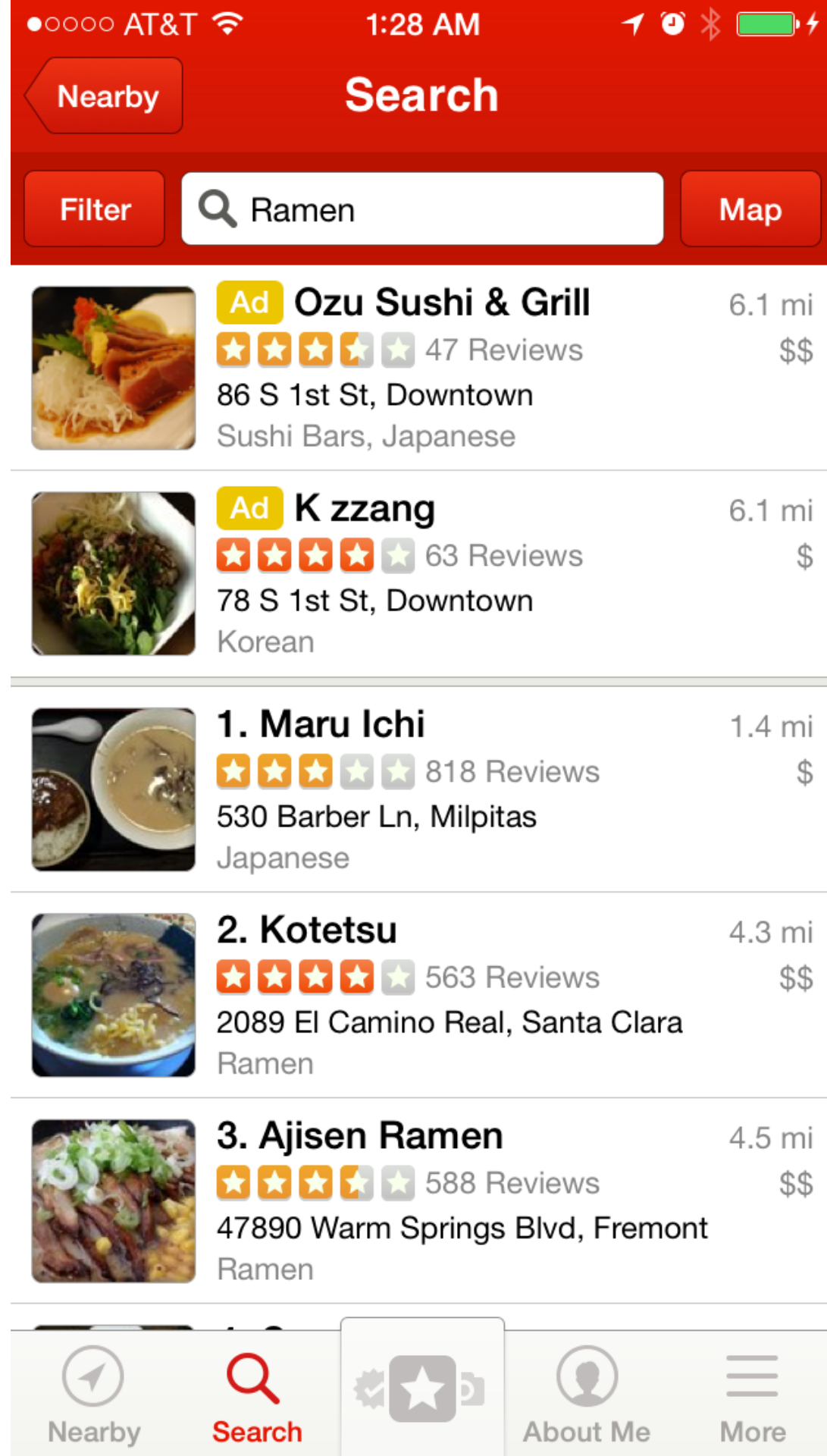


Or people in San Diego
are just too positive.

Mobile Is Dominating The Consumer Purchase Decision Process



Reference: Mobile Path-to-Purchase Study



...make the decision?

Ozu Sushi & Grill	6.1 mi	\$\$	★ ★ ★ ★ ☆ 47 Reviews
K zhang	6.1 mi	\$	★ ★ ★ ★ ☆ 63 Reviews
Maru Ichi	1.4 mi	\$	★ ★ ★ ★ ☆ 818 Reviews
Kotetsu	4.3 mi	\$\$	★ ★ ★ ★ ☆ 563 Reviews
Ajisen Ramen	4.5 mi	\$\$	★ ★ ★ ★ ☆ 588 Reviews

Search

Maru Ichi



Justin U.

1 day ago

95 3 11

1 1

The food was great but the guy who was serving us didn't seem to care about what he was doing. We came i...



Justin O.

29 days ago

1 3 0

One of my favorite ramen places in southbay. I go for their combo B with Kuro ramen every time. The black lo...



Christine V.

9 days ago

62 71 0 Elite '14

1 Check-In

This place has average ramen. I'll come here if I want ramen but don't want to go out of my way to go to ot...

Search

Kotetsu



Yoshika H.

3 hours ago

170 202 38

1 Check-In

I am sorry I can only give this place a 2 star. But here is why. Came here on Saturday before 1pm. The wait was a...



Jason P.

5 hours ago

12 2 1

Never got to even try the food, probably won't come back... I understand you close at 930 I got th...



Judy T.

10 hours ago

33 26 0

1 Check-In

Like this place a lot. I am a regular ramen lover...ramen dojo, ramen parlor and Orenchi are my favorites. Ramen...



**The More I Think
The More Confused I Get**

Make your decision-
making easier
















ReviewCollage: A Mobile Interface for Direct Comparison Using Online Reviews

A mobile interface using **attribute-value pairs** to summarize review text and highlight the **similarities** and **differences** between multiple entities

ReviewCollage

compare reviews?

Compare gadgets

Gadgets					
Gadget:	 Apple iPhone 3GS remove	 Nokia XpressMusic 5530 remove	 RIM BlackBerry Bold 9000 remove	 HTC Hero remove	 HTC Dream (T-Mobile G1) remove
Popularity:	 10.0	 6.8	 0.1	 0.2	 3.0
Average rating:					

General	Apple iPhone 3GS	Nokia XpressMusic 5530	RIM BlackBerry Bold 9000	HTC Hero	HTC Dream (T-Mobile G1) ▼
Type	Smartphone	Smartphone	Smartphone	Smartphone	Smartphone
Operating system	iPhone / OS X	Symbian (S60 (5th edition))	BlackBerry	Android	Android
Version	--	--	--	--	--
Form factor	Apple iPhone 3GS	Nokia XpressMusic 5530	RIM BlackBerry Bold 9000	HTC Hero	HTC Dream (T-Mobile G1) ▼
Style	Bar	Bar	Bar	Bar	Slider
Antenna	Internal	Internal	Internal	Internal	Internal
Input	Apple iPhone 3GS	Nokia XpressMusic 5530	RIM BlackBerry Bold 9000	HTC Hero	HTC Dream (T-Mobile G1) ▼
Input type	Touchscreen (Capacitive [finger])	Touchscreen (Resistive [stylus])	QWERTY keyboard	Touchscreen (Capacitive [finger])	QWERTY keyboard, Touchscreen (Capacitive [finger])
Predictive text	Yes	Yes	--	Yes	Yes
Navigation type	--	--	Scroll wheel	Trackball	Trackball
Power	Apple iPhone 3GS	Nokia XpressMusic 5530	RIM BlackBerry Bold 9000	HTC Hero	HTC Dream (T-Mobile G1) ▼
Talk time	2G (up to 12 hours), 3G (up to 5 hours)	--	3G (up to 5 hours)	3G (up to 7 hours)	2G (up to 406 hours), 3G (up to 250 hours)
Standby time (max)	300 hours	--	312 hours	750 hours	402 hours
Battery type	Li-Ion	--	Li-ion (Removable, 1500 mAh capacity)	Li-ion (1350 mAh capacity)	Li-Ion (Removable, 1150 mAh capacity)

Comparison Matrix

Tender, juicy ribs with meat that falls off the bone and soon melts in your mouth. The bbq **sauce** is a little **sweeter** and **tangier** than most I've had and I liked it however it really drowned my meal and I was eventually scraping globs of it off.

Now in the UK

yelp
Real people. Real reviews.®

Search for (e.g. taco, cheap dinner, Max's)

Welcome About Me Write a Review Find Reviews Invite Friends

Sushi Zone

616 reviews Rating Details

Categories: Sushi Bars, Japanese (Bar)

1815 Market St
San Francisco, CA 94103

Neighborhoods: Hayes Valley, Mission

(415) 621-1114
www.facebook.com/pages/Sushi-Zon...

Hours: Mon-Sat 5 pm - 10 pm
 Good for Kids: No
 Accepts Credit Cards: No
 Parking: Street
 Attire: Casual
 Good for Groups: No

Price Range: \$\$
 Takes Reservations: No
 Delivery: No
 Take-out: No
 Waiter Service: Yes
 Outdoor Seating: No
 Wi-Fi: No

Edit Business Info Work Here? Unlock This Business Page

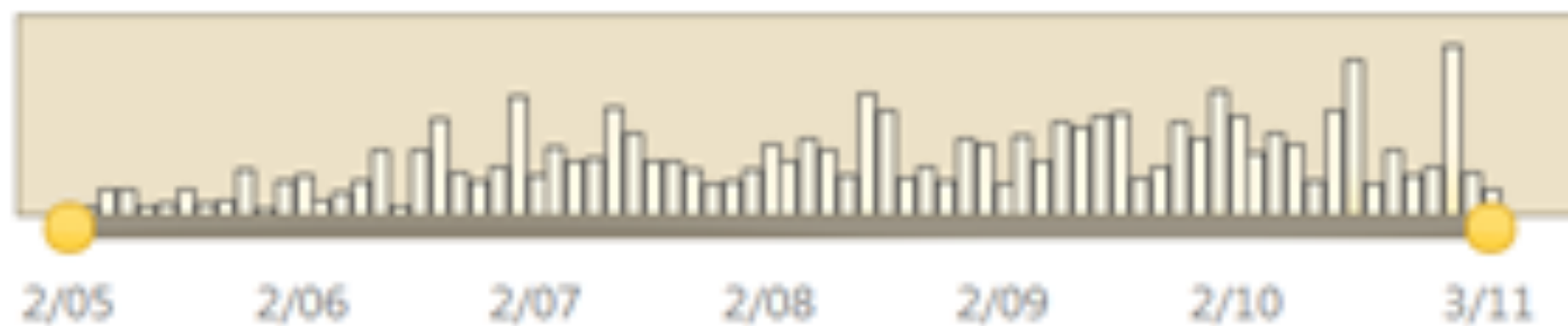
Send to Friend Bookmark Send to Phone Write

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PerkinsRestaurants.com/Franchise

azuma sushi
Looking For a Tradit
312-8768
www.AzumaSushi.ca



Positive Negative Objective



Review spotlight [CHI 2011]

**Extracted
Attributes**

pizza:

good (115), best (104), great (40), delicious (35), amazing (23)

crust:

thin (57), crispy (27), chewy (15), crisp (14), amazing (12)

place:

small (35), packed (21), good (18), great (14), tiny (11)

table:

communal (33), ready (24), long (13), high (7), large (5)

service:

**Extracted
Values**

**Green means
Positive**

**Mentions in
Reviews**

**Alternate
Interfaces**

Common Special Cloud Categories

Style	Bar	Bar	Bar
Antenna	Internal	Internal	Internal
Input	Apple iPhone 3GS	Nokia XpressMusic 5530	RIM BlackBerry Bold 9000
Input type	Touchscreen (Capacitive [finger])	Touchscreen (Resistive [stylus])	QWERTY keyboard
Predictive text	Yes	Yes	--
Navigation type	--	--	Scroll Wheel
Power	Apple iPhone 3GS	Nokia XpressMusic 5530	RIM BlackBerry Bold 9000
Talk time	2G (up to 12 hours), 3G (up to 5 hours)	--	3G (up to 5 hours)
Standby time (max)	300 hours	--	312 hours
Battery type	Li-ion	--	Li-ion (Removable, 1500 mAh capacity)

compare values?

Sweet sauce (100)

Sweet sauce (0)

of mentions in 2 BBQ restaurants

Special sauce (1000)

Special sauce (1)

of mentions in 2 BBQ restaurants

Spicy sauce (1000)

Spicy sauce (10)

of mentions in 2 BBQ restaurants

Flavorful sauce (1000)

Flavorful sauce (1000)

of mentions in 2 BBQ restaurants

Hot sauce (150)

Hot sauce (150)

of mentions in 2 BBQ restaurants

hot (150) hot (150)

flavorful (100) flavorful (100)

spicy (100) spicy (10)

special (100) special (1)

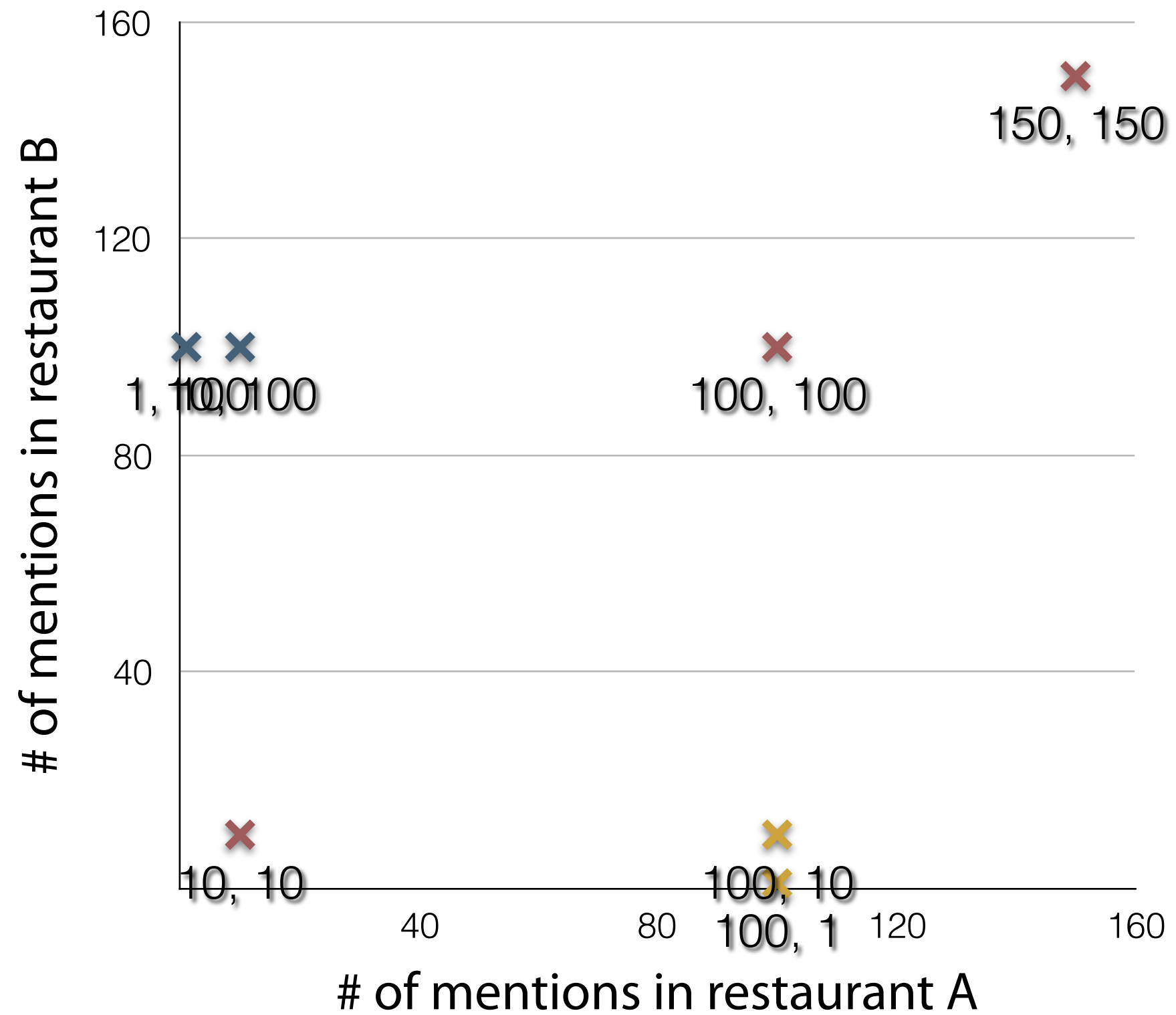
sweet (100) sweet (0)

Shared
(Common)

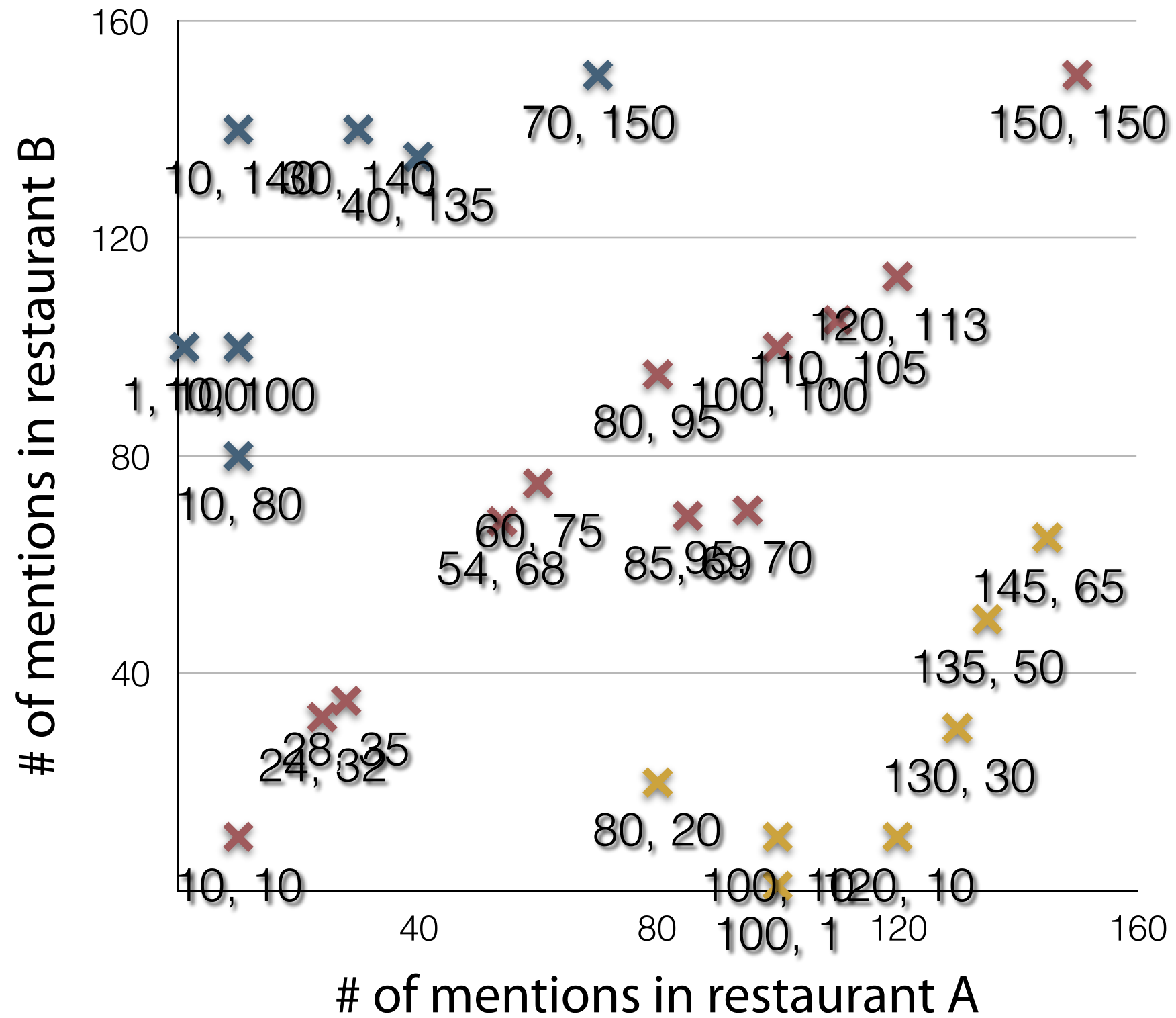


Distinct
(Unique)

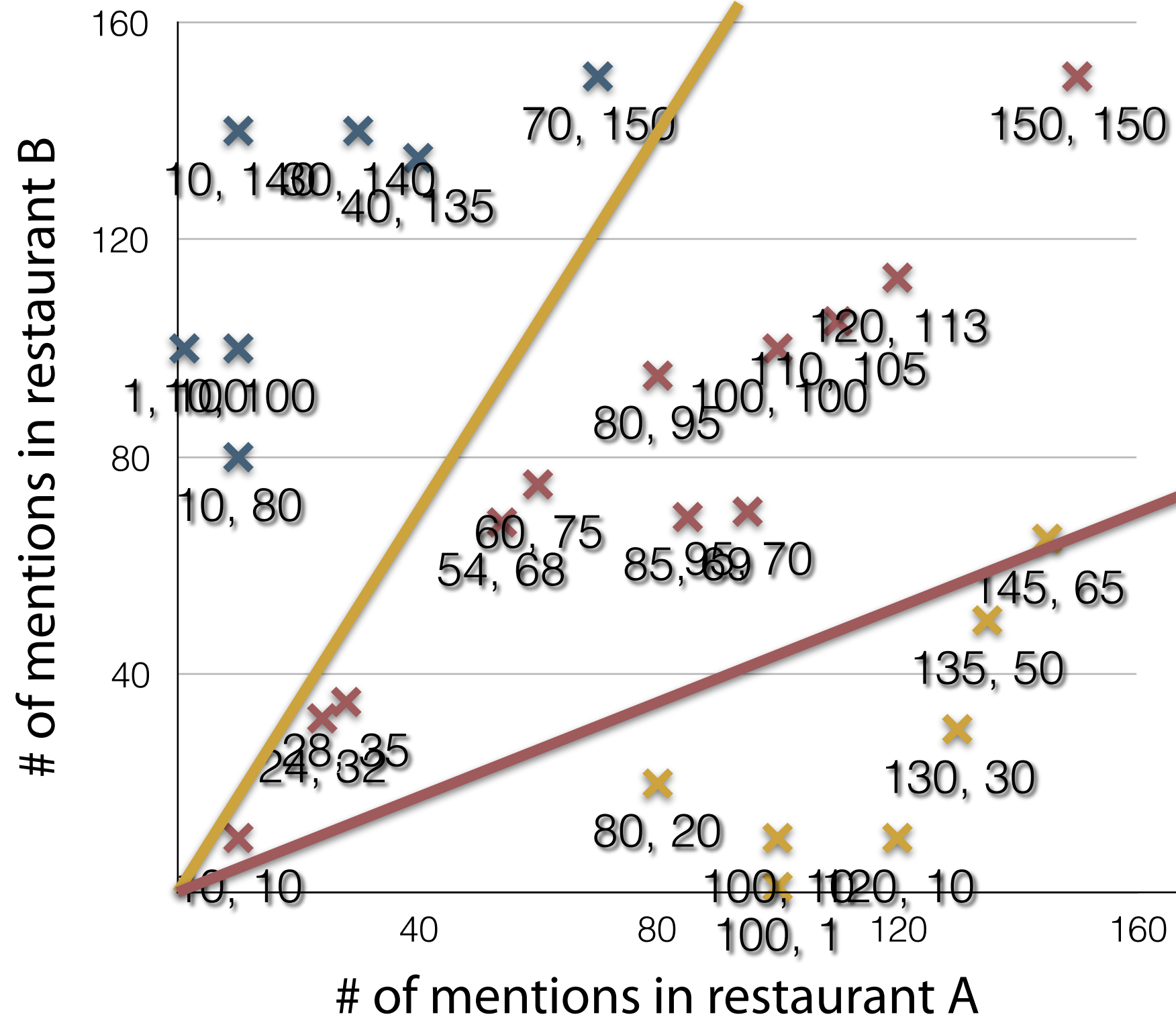
× Distinct in B × Shared × Distinct in A



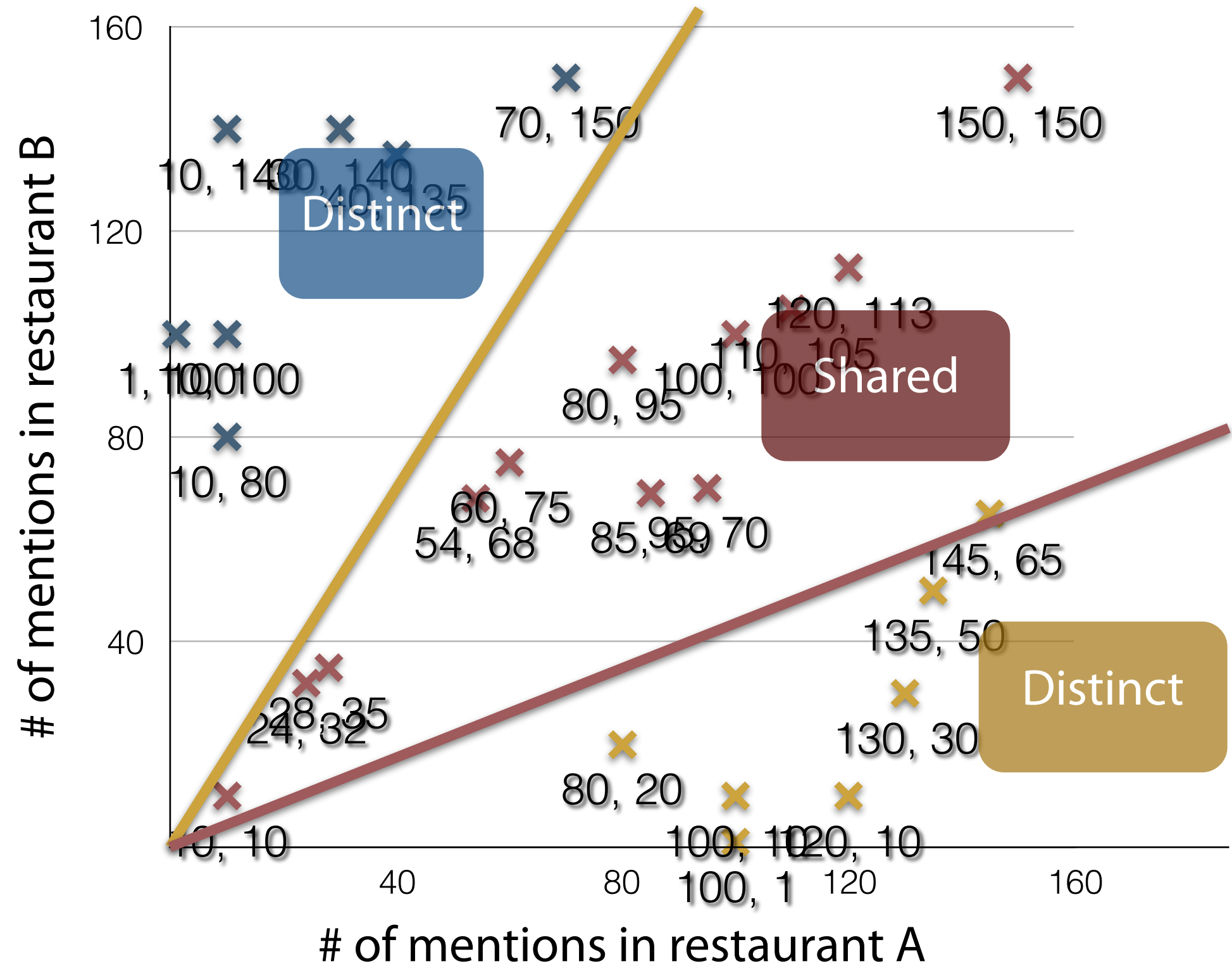
× Distinct in B × Shared × Distinct in A



× Distinct in B × Shared × Distinct in A



× Distinct in B × Shared × Distinct in A



Steepness

$$SDv(tf_A, tf_B) = Max(tf_A, tf_B) \times \left(\frac{\pi}{8} - \tan^{-1} \frac{Min(tf_A, tf_B)}{Max(tf_A, tf_B)} \right)$$

Occurrences

Shared-Distinct value

Prototype
Implementation

Bottega Louie
4452 reviews Rating Details
Categories: Pizza, Italian, Desserts [Edit]
700 S Grand Ave
Los Angeles, CA 90017
Neighborhood: Downtown
(213) 802-1470
http://www.bottegalouie.com
Menu
Hours:
Mon-Thu 8:30 am - 11 pm
Fri 8:30 am - 12 am
Sat 9 am - 12 am
Sun 9 am - 11 pm
Good for Groups: Yes
Accepts Credit Cards: Yes
Parking: Garage, Street, Private Lot, Valet
Attire: Casual

Price Range: \$\$
Good for Kids: No
Takes Reservations: No
Delivery: No
Take-out: Yes
Waiter Service: Yes
Outdoor Seating: No
Wi-Fi: Free

Good For: Lunch, Dinner
Alcohol: Full Bar
Noise Level: Very Loud
Ambience: Trendy
Has TV: No
Caters: No
Wheelchair Accessible: Yes

Bottega Louie
4452 reviews Rating Details
Categories: Pizza, Italian, Desserts [Edit]

60 restaurants
50k+ reviews
26k+ images

Edit Business Info
Send to Friend Bookmark Send to Phone Write a Review

Fresh Brothers 177 reviews
About This Business:
Fresh Brothers is a Chicago-style pizza place - deep dish, thin crust pizzas. We use the finest cheese in the pizza biz, farm fresh veggies and our...

Reviews (4452) About This Business

4452 reviews for Bottega Louie

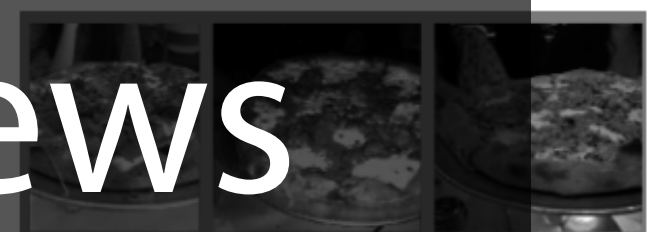
- Review Highlights What's this?
- "Portobello Fries (\$9): Ah-Maz-ing." In 837 reviews
 - "I tried 6 of their macarons and all were delicious." In 729 reviews
 - "The souffle though~ Oh my god, totally worth the wait." In 278 reviews
- Show more review highlights

A Yelp Insight: Vegetarians go nuts for this spot. See more places they like.

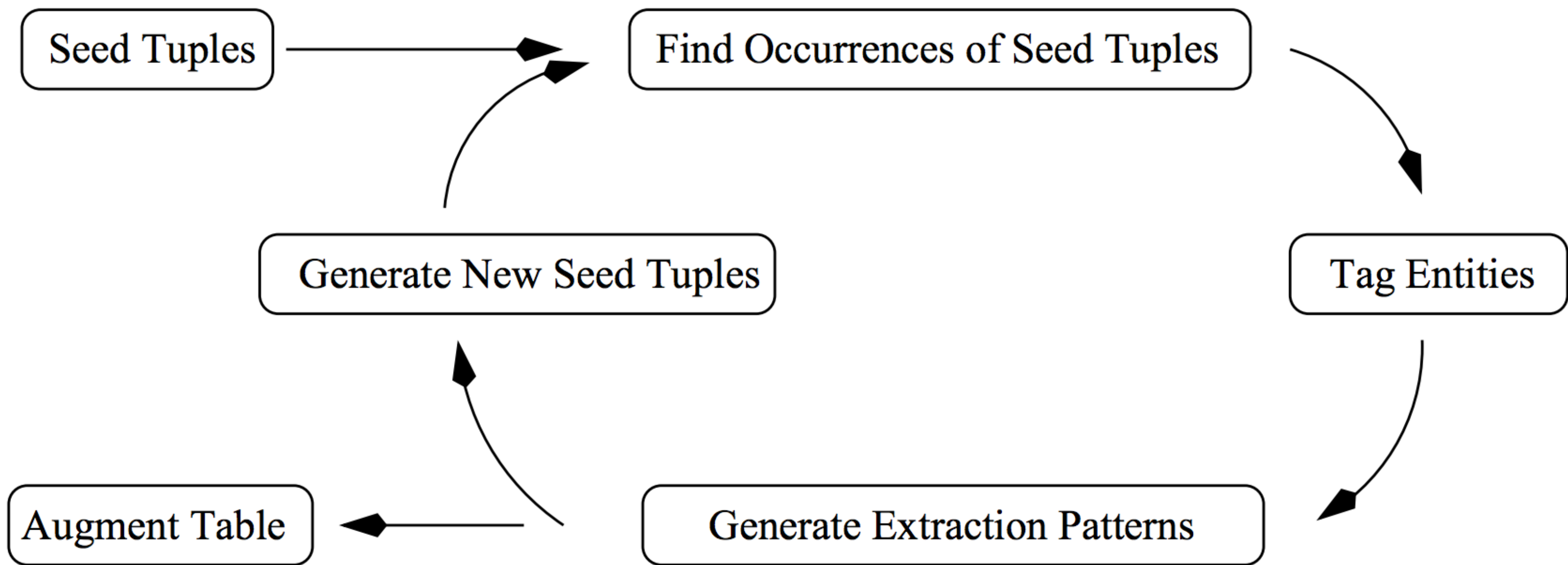
Sort by: **Yelp Sort** | Date | Rating | Elites' | Facebook Friends'

4448 reviews in English

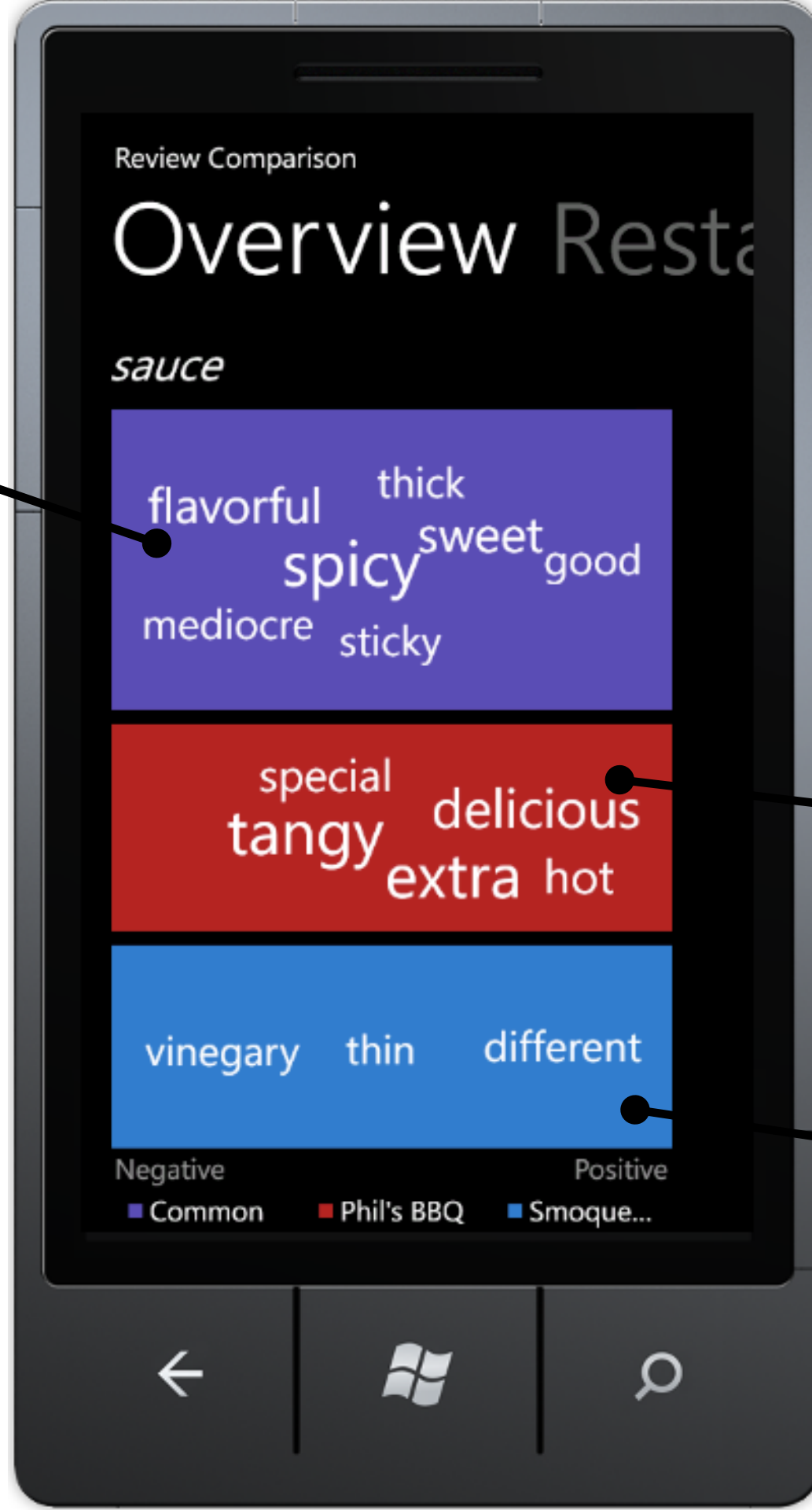
Elite '12 305 240
Michelle E. Las Vegas, NV
8/24/2012 1 Check-in Here
I came to this joint strictly for the french macarons. My ultimate favorite ones to get are coffee, pistachio, vanilla, and the best one ever: salted caramel. The salted caramel macarons are to die for. I would actually get a box of 5 of those, and another variety box of 5 of 1 of each of the other flavors. But you MUST get more than 1 of the salted caramel ones, or you will definitely regret it.



- Most frequently-used word pairs:
- Thin crust, crispy crust, super crust...
 - Olive oil, garlic oil, tomatoes oil...
 - tasting pizza, thin-crust pizza...
 -



Common



Phil's BBQ

Smoque BBQ

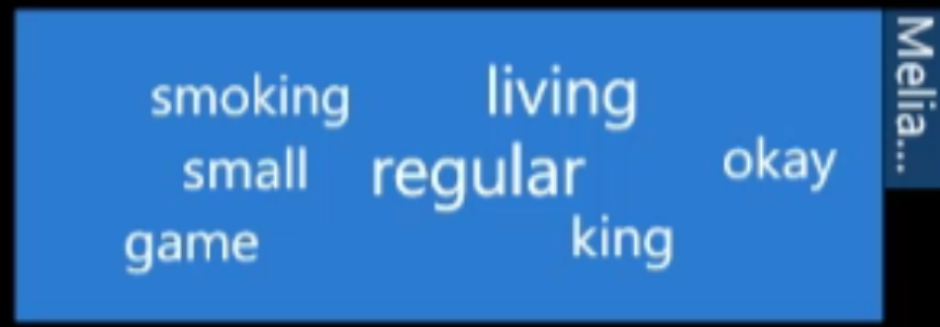
Tag cloud like
visualization

ramen	(150)	ramen	(150)
rice	(150)	rice	(20)
place	(150)	place	(30)
wait	(1)	wait	(50)
service	(25)	service	(20)
soup	(20)	soup	(20)
meat	(10)	meat	(8)

SD values also work for attributes.

Overview Grand

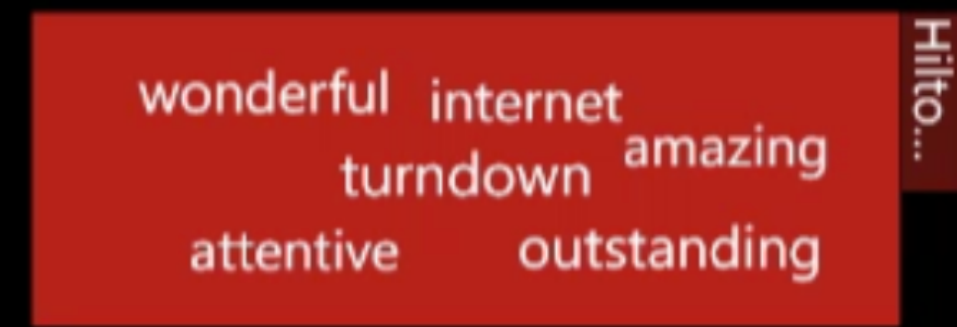
room



Negative Positive
 ■ Common ■ Grand... ■ Melia...

Overview Hilto

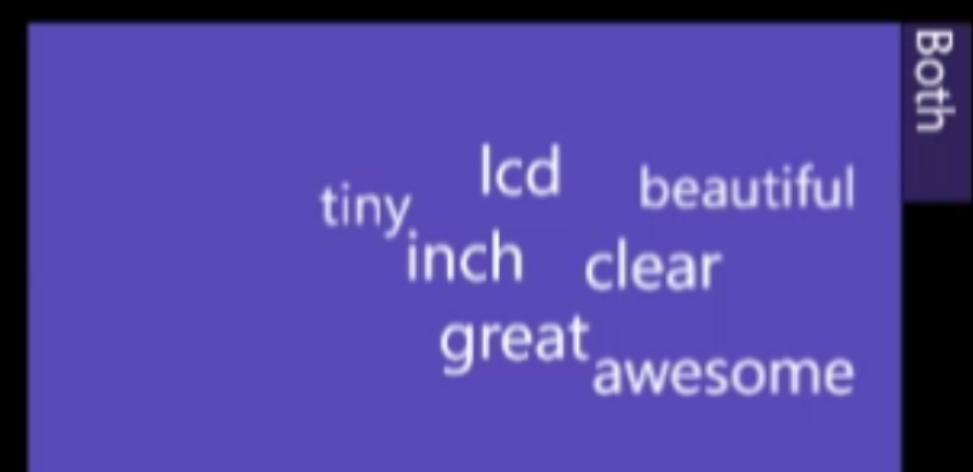
service



Negative Positive
 ■ Common ■ Hilton... ■ Barcelo...

Overview Zune

screen



Negative Positive
 ■ Common ■ Zune... ■ Apple...

hotel reviews from TripAdvisor

product reviews from Amazon

Evaluation

Comparing ReviewCollage with two existing summarization interfaces

Restaurant A R Restaurant B R

seasoned ribs
corn bread
dry meats
fried chicken
small side
pork sandwich
bbq place
pork ribs
pulled pork
tri tip
good bbq
bbq sauce
brisket beef
sweet tea
salad potato
good food
sauce mustard
smokey flavor
muffin corn
francisco san

good food
cole slaw
bbq place
sweet tea
back ribs
bbq fan
bbq sauce
pulled pork
good bbq
brisket beef
staff wait
corn bread
sweet potatoes
great service
baked beans
good taste
tender meat
dining experience
back coming

Review
Spotlight
[CHI 2011]

Restaurant A R Restaurant B T

bbq

good(158) best(151) joint(124)
sauces(96) great(74)

sauce

bbq(331) red(130) hot(62) vinegar(61)
barbecue(35)

pork

pulled(342) smoked(97) bbq(58)
rib(54) sweet(53)

place

bbq(204) great(36) good(32) small(19)
favorite(18)

beef

brisket(258) ribs(158) texas(21) big(7)
bbq(4)

sandwich

pork

pulled(485) plate(17) platter(12)
bbq(12) san(11)

bbq

good(87) joint(82) best(48) sauces(46)
blues(41)

sauce

bbq(182) hot(52) different(20)
barbecue(12) spicy(10)

ribs

back(162) pork(49) memphis(41)
style(26) bbq(18)

beef

brisket(140) ribs(106) style(10) bbq(10)
texas(7)

place

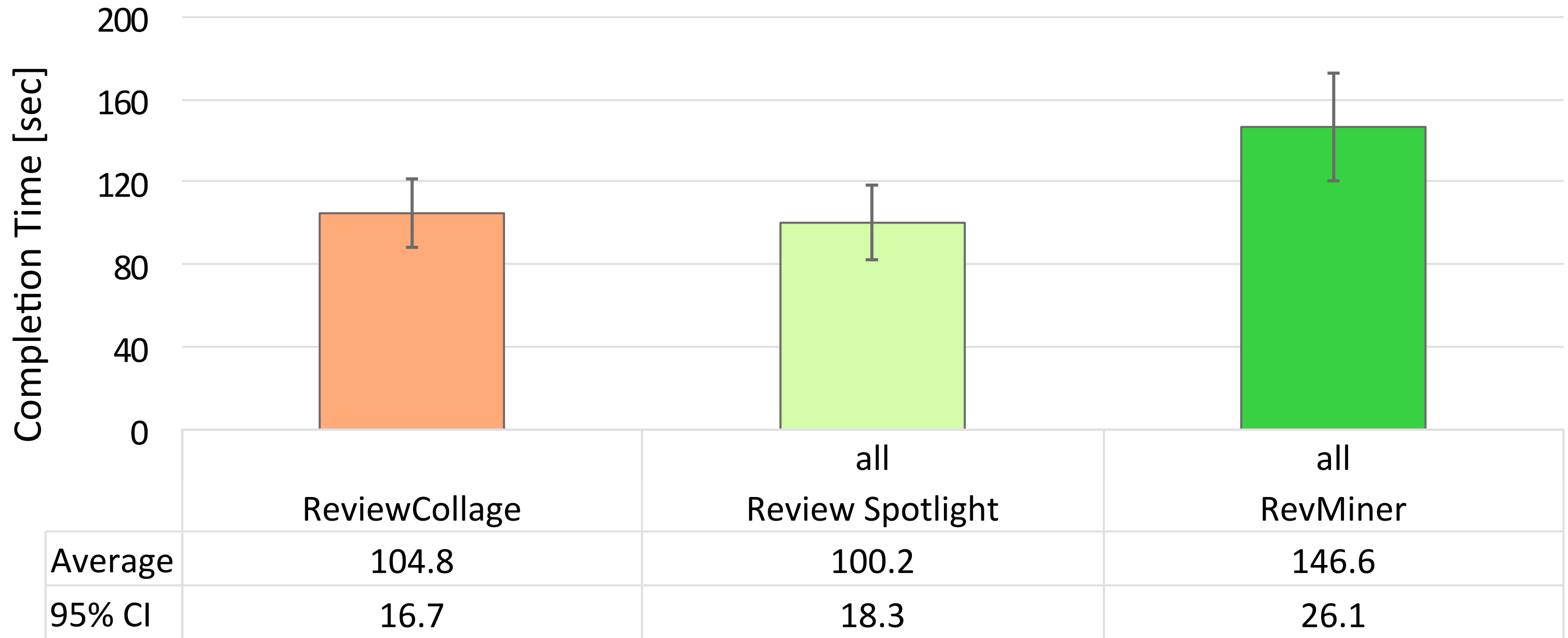
RevMiner
[UIST 2012]

A close-up photograph of a person's hand holding a black HTC smartphone. The phone's screen is lit up and shows a text message with several lines of text, though the text is mostly illegible due to blurring. The phone is held against a light-colored, textured background, possibly a wooden table. A semi-transparent dark grey rectangular box is overlaid on the lower-left portion of the image, containing white text.

user study

12 Participants, 5 female + 7 male, age: 23-26

Tasks: choose a restaurant want to visit and express their opinion.



Completion time

“To compare two restaurants, I thought this interface (ReviewCollage) would be much better especially when they are the same types of restaurants.”

[P02]

“I found Both (shared word pairs) is not helpful for me to judge because I only needed to see the difference between Restaurant A and B.”

[P10]

Demonstrated ReviewCollage, a mobile interface to support comparison between two reviewed entities

Presented SD-value, an algorithm to classify unique and common key words only based on their frequencies of occurrences in review text

Showed that ReviewCollage would be most useful when the entities to compare are very similar

Summary



Thank you.

Haojian Jin. Yahoo Labs. haojian@yahoo-inc.com