

Contextual Search and Exploration



Images



Video



Mail



Maps



Metrica



Yandex.Browser

Yandex

Search

Yandex in



Russia



Ukraine



Belarus



Kazakhstan



Turkey

Contextual Search and Exploration

RuSSIR 2015

Saint Peterburg, Russia

Charles L. A. Clarke
University of Waterloo
Canada

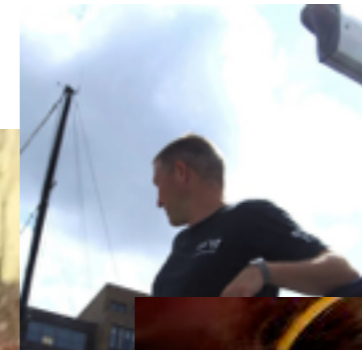
Jaap Kamps
University of Amsterdam
The Netherlands

Julia Kiseleva
Eindhoven University of Technology
The Netherlands

Grace Hui Yang
Georgetown University
USA

(with special thanks to Adriel Dean-Hall, Waterloo)

Your friendly instructors



Goal

- Addressing complex information needs on mobile devices.
- Using rich contextual information and user profiles.
- Taking into account complex constraints, exploring options, and combining individual answers into a coherent whole

Our specific focus:

Point-of-interest recommendation for travelers
(e.g., American, Canadian, and Dutch people
in Saint Petersburg in August,
or *What are we going to do this evening?*)

Welcome!

About Us

We Like to Have Fun!

- Travel the world, dance, drink, party.
- This year for me: *San Francisco (SIGIR PC)*, *Santiago (SIGIR)*, *St. Petersburg (RUSSIR)*, *Toulouse (CLEF)*, *Northampton (ICTIR)*, *Melbourne (CIKM)*, *Gaithersburg (TREC)*, *Gandhinagar (FIRE)*, ... plus a bunch of European trips...
- Charlie's trips take more than a slide :)

...While Doing Serious Stuff

- Write papers, run projects, ...
- Run benchmarking tasks (TREC).
- Run workshops, conferences, ...



- Run the field — support students to fly to exotic locations and make friends from all over the world.

Our Secret Plan...

please don't tell the organizers!!!

We are “Using” You!

- We wanted to go to a great place to have a great holiday before the new teaching terms starts!
- Spb is an *amazing city* to visit!
- But we are clueless about what to do — speak no Russian, read no cyrillic, are too busy (and lazy).
- We invented a course so *you* will be planning *our* holiday in Spb!

ENTERTAINMENT





Supporting Complex Search Tasks

Nick Belkin Charlie Clarke Ning Gao Jaap Kamps Jussi Karlgren

SIGIR 2011 Workshop, July 28, 2011

TREC Contextual Suggestion

Navigation

TREC 2015

TREC 2014

TREC 2013

TREC 2012

TREC 2015

As part of the National Institute of Standards and Technology (NIST) Text REtrieval Conference (TREC), the Contextual Suggestion Track deals with complex information needs which are highly dependent on context and user interests.

Mailing list: <https://groups.google.com/forum/#!members/trecontext>

Twitter: [@trecontext](https://twitter.com/trecontext)

Register for TREC in order to participate in this track: <http://trec.nist.gov/pubs/call2015.html>

Track Organizers

- Charles L. A. Clarke, University of Waterloo
- Adriel Dean-Hall, University of Waterloo
- Jaap Kamps, University of Amsterdam
- Julia Kiseleva, Eindhoven University of Technology

Contexts

The contexts (target cities) for 2015 are available for download below. Lat/long coordinates have been provided in a separate file for convenience, these **do not** represent the exact position of the user but rather are analogous to the name of the city.

Subpages (1): [Pre-TREC Task](#)



contexts2015.csv (4k)

Adriel Dean-Hall, Jan 12, 2015, 8:06 AM

v.1



contexts2015coordinates.csv (6k)

Adriel Dean-Hall, Jan 12, 2015, 8:06 AM

v.1



Who Are You?

We Need Your Help!

- We are talking about the next generation of search
- Which will be invented and built by the next generation of researchers...
- That is by *you* and not by *us*

Hands On

- Hackathon on Tuesday!
 - We have 102 candidate venues to visit in Spb
 - Palaces, Museums, Restaurants, Bars, Clubs
 - We have profiles of Charlie, Julia and Jaap
 - Can you build a system that gives us the best venues to visit?
- Special Edition of the TREC Contextual Suggestion Track

Don't Miss This!

- Please tell me you're coming!
- (It's OK to join even if you'll be in the YSC! Really!)
- We will have prizes and certificates for the best teams!
- We will get pizza for everyone on Tuesday!
- We will get you anything you want — just tell us!



Course Overview

- Part 1 (Mon): Overview and approaches
- Part 2 (Mon): Designing an experiment
- Part 3 (Tue): Hackathon (evening)
- Part 4 (Wed): Venue Recommendation in Action
- Part 5 (Thu):
 - Search & Recommendation
 - Student presentations & Awards and Prizes

Part 1

Overview and Approaches

Overview of Part 1

- Welcome
- Venue Recommendation
- No Geo Search
- No Collaborative Recommendation
- No One-Size-Fits-All Approach

Venue Recommendation

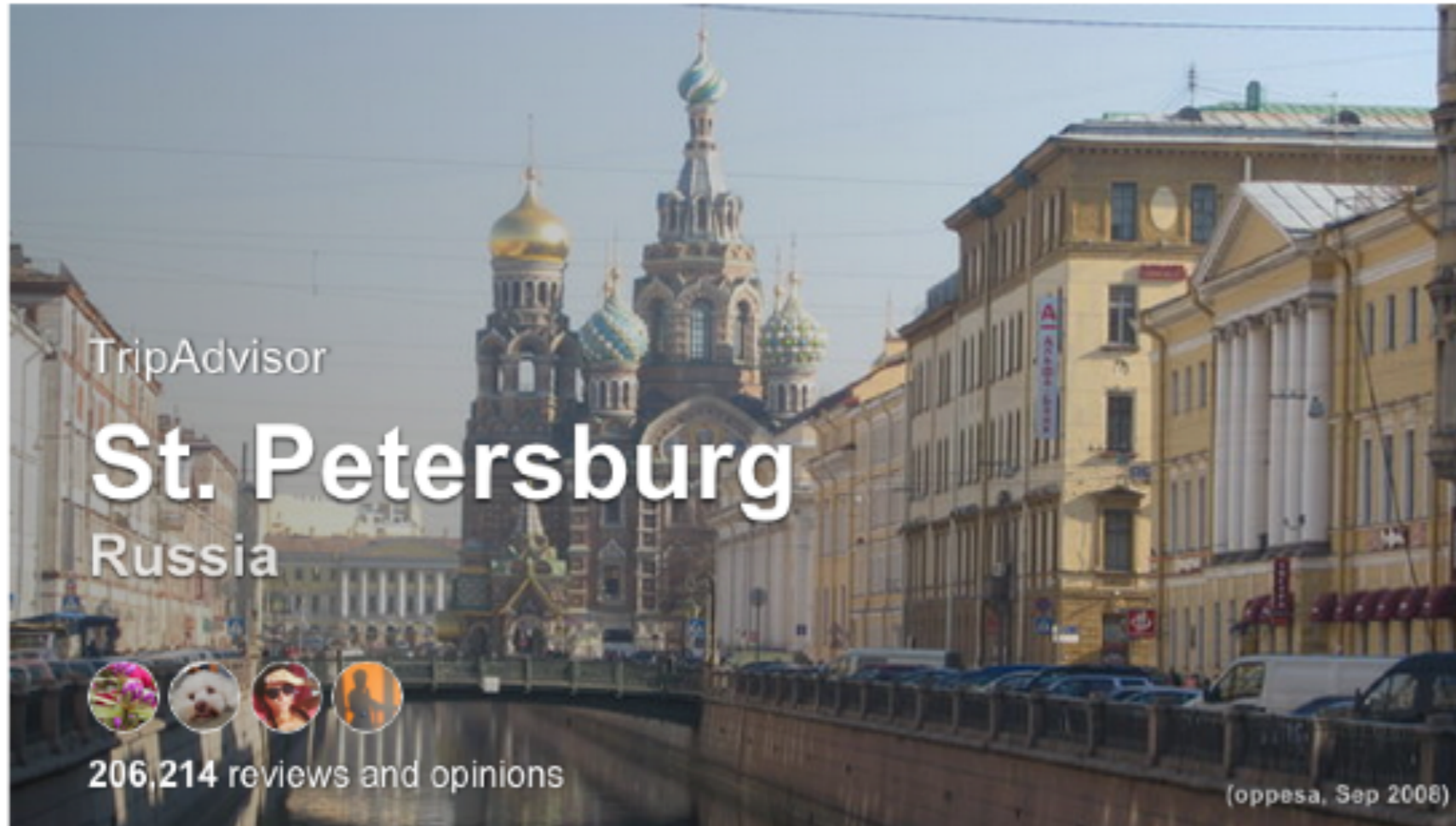
- How to plan what to do in an unknown city?
- What to see? Where to eat? Where to drink?
- The most popular things? Or those that / like best?
- Is there actually a ballet performance tonight?
- How do I get from *venue1* to *venue2* to ...?

St. Petersburg, Russia, Europe

What are you looking for?

Search

Europe > Russia > Northwestern District > St. Petersburg Tourism



TripAdvisor

St. Petersburg

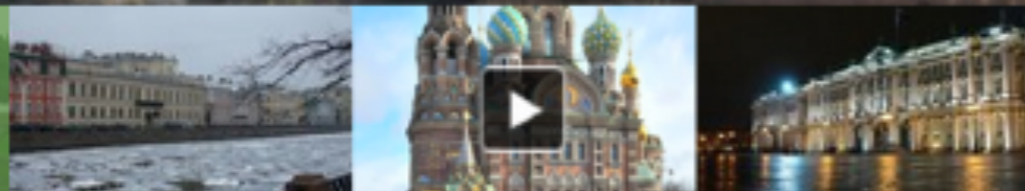
Russia



206,214 reviews and opinions

(oppesa, Sep 2008)

32,856 candid traveler photos



- Hotels (285)**
49,932 Reviews
- Vacation Rentals (365)**
172 Reviews
- Flights**
from \$263
- Things to Do (1,661)**
74,272 Reviews
- Restaurants (9,177)**
76,353 Reviews
- Forum**
5,247 Posts
- Travel Guides**
11 Guides

For Suggestions **Best Nearby** near **Saint Petersburg**

Show me:

Specials

Have not Been

Following

Price

Open Now

Saved

Liked

1. **Soul Kitchen Hostel**

9.6

nab. River Embankment, 62/2
Hostel

B. Martin · October 24, 2013

One of the best hostel I have ever been. Located in the centre, very quiet, very clean (incl. Showers and toilets). In the hostel is wifi free, PC room with Macs and nice kitchen.



Save

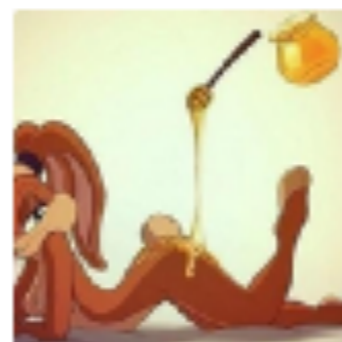
2. **WAXABAR**

9.5

st. Marat, 77
Salon / Barbershop

D. Alexandra · December 7, 2014

I go here for more than three years and there is no desire or need to change the salon! Wonderful Wizard, cozy atmosphere :) Well done!!!!



Save

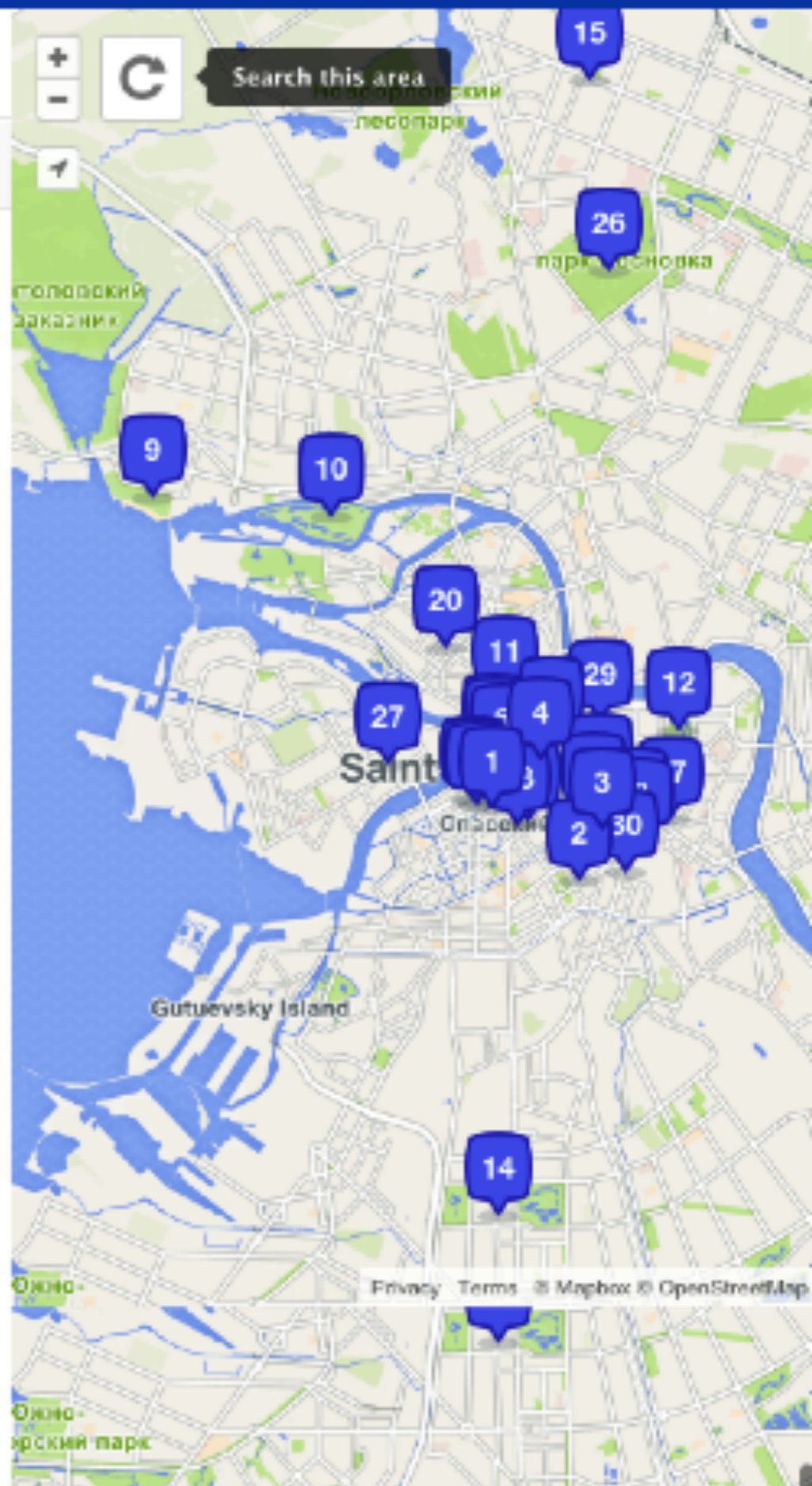
3. **El Copitas**

9.5

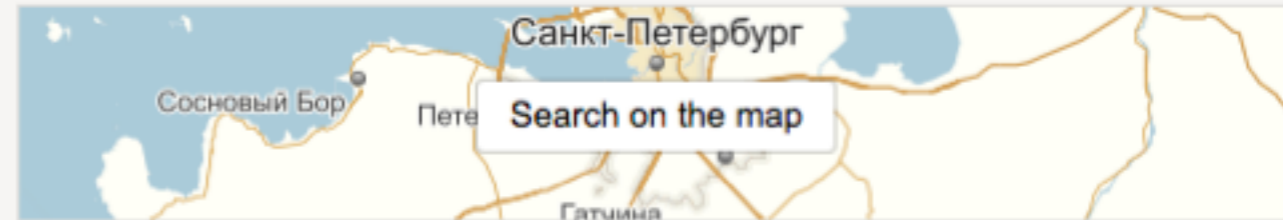
Bel Street., 2
Cocktail · \$\$\$

W. Morgan · April 13

Probably the best bar in SP if you can find it. Very welcoming staff and great drinks. The chef makes an excellent salsa fresca so definitely get some nachos!



Ask what kind of organization you're looking in the area.



Yandex



Oratorical courses - 17 years in St. Petersburg!

Courses rhetoric. August 24th Free trial lesson. Writes!
ritorikaspb.rf [Address and phone number](#)

Gift Certificates

Sportmaster, MediaMarkt, Ozon, Euroset, M.video and other
bezbarana.ru [Address and phone number](#)



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aeroflot.ru [Address and phone number](#)



Find tacos, cheap dinner, Max's

Near address, neighborhood, city, state or zip



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Home About Me Write a Review Find Friends Messages Talk Events

Log In

Yelp Saint Petersburg

Amsterdam San Francisco New York San Jose Los Angeles Chicago More Cities »

Yelp is the best way to find great local businesses

People use Yelp to search for everything from the city's tastiest burger to the most renowned cardiologist. What will you uncover in your neighborhood?

Create Your Free Account

Your Review Awaits

Here are some suggestions to get you started.



Bodega



Roll over stars, then click to rate.

Start your review...

★ Been to this place in Saint Petersburg? What's your take on it?

Best of Yelp: Saint Petersburg

Restaurants 1,773 reviewed

Nightlife 395 reviewed

Food 746 reviewed

Shopping 1,202 reviewed

Restaurants

See More



1. Bodega

★★★★★ 307 reviews



Great little place in St Pete for excellent Cuban food!



2. Craft Kafe

Review of the Day



Marinda H. reviewed Detroit Coney Island



If you are from the Detroit area, run, don't walk, to Detroit Coney Island!

We've tried every coney dog joint in Pinellas and haven't found anything close to the Detroit area coney dogs that we've been... [Read more](#)

Archive

Yelp is totally portable



It's like carrying around 1,000 phonebooks in the palm of your hand. No biceps required. Download the app now.

Enter your number or email address and we'll send you a link to install the app.

+1 (123) 456-7890

Go

We don't charge for this service. Standard messaging rates apply.

[Learn more](#)

Popular Events

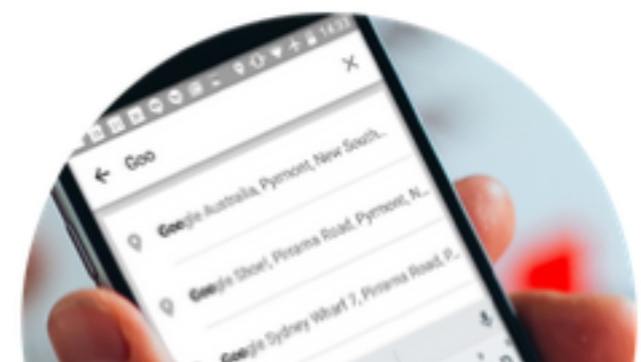


Google Places API

Make your app stand out with detailed information about 100 million places across a wide range of categories, from the same database as Google Maps and Google+.



API Features



Complex Task


Yandex

entertain me — 2 million answers



Search

Web

 **Entertain Me Lyrics - The Psychedelic Furs**

[lyricsfreak.com](#) > [t/the psychedelic...entertain me...](#)

Entertain me Entertain me Speak, entertain me Talk to me Don't talk to me Spell, pay for me Spell, spell lie for me Spell, spell want for me Sing...

Images

Video

Translate

More

 **ENTERTAIN ME Lyrics - SOFT CELL**

[elyrics.net](#) > [read/s/soft-cell-lyrics/entertain-me...](#)

Entertain me I'm as blank as can be And I've seen it before And I've done it before And I think that I like it But no I don't like it It just goes on over and over And over and over and over...

 **Blur - Entertain Me Lyrics | MetroLyrics**

[metrolyrics.com](#) > [entertain-me-lyrics-blur.html](#)

Entertain me Entertain me Entertain me Entertain me. A car, a house, both in a street The boredom of a sober week The weekend's here...

 **View videos for entertain me**

[video.yandex.com](#) > [entertain me](#)



A man with dark hair and tattoos on his arms and neck is sitting at a desk in a cluttered office. He is wearing a bright green t-shirt with a yellow graphic. He has a frustrated expression, with his mouth wide open in a scream and his hands raised in a gesture of exasperation. The desk is covered with various items, including a laptop, a keyboard, a mouse, a glass of beer, and some papers. The background shows a typical office environment with a door, a printer, and some framed pictures on the wall.

Complex tasks are still painstaking!

Many queries, tabs, notes, cut-and-paste, ...

No Context (Web)

Google

bar



Sign in

Web

Maps

Shopping

Images

Videos

More ▾

Search tools



About 2,630,000,000 results (0.41 seconds)

Images for bar

Report images



More images for bar

Bar (establishment) - Wikipedia, the free encyclopedia

[https://en.wikipedia.org/wiki/Bar_\(establishment\)](https://en.wikipedia.org/wiki/Bar_(establishment)) ▾ Wikipedia ▾

A bar (also known as a saloon or a tavern or sometimes a pub or club, referring to the actual establishment, as in pub bar or club bar etc.) is a retail business ...

Bar - Wikipedia, the free encyclopedia

<https://en.wikipedia.org/wiki/Bar> ▾ Wikipedia ▾

Bar (law), the division of a courtroom between working and public areas; the process of qualifying to practice law; or the legal profession; Bar association, ...

Mbar - Bar - Bar, Montenegro - Bar association

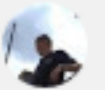
Location as Query



bar st petersburg russia



Jaap



Web

Maps

Shopping

Images

News

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Search tools



About 5,220,000 results (0.83 seconds)

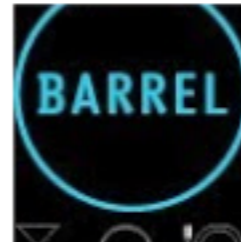
Bar near st petersburg russia

Rating ▾

Barrel, Bar

4.2 ★★★★★ 9 reviews · Bar

Kazanskaya ul.



Гадкий Койот

3.2 ★★★★★ 35 reviews · Bar

Liteyny Ave · Lively saloon famous for bartop dancing

Opens at 8:00 pm



Shamrock Bar

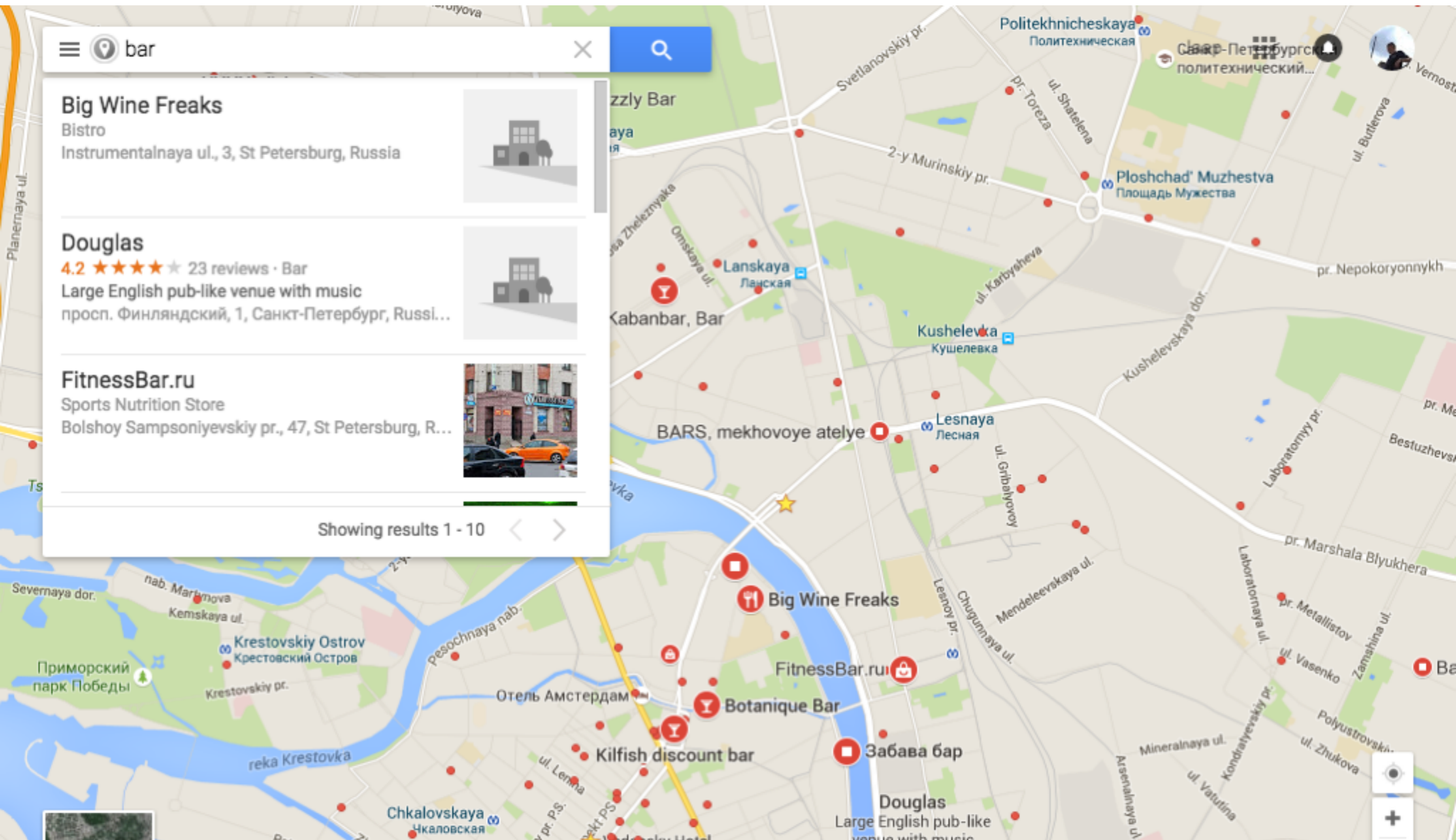
3.6 ★★★★★ 15 reviews · French

ul. Dekabristov



☰ More bar

Location as Context



Personal

JaKa-profile.txt

```
{
  "body" : {
    "group" : "Friends",
    "duration" : "Longer",
    "season" : "Autumn",
    "trip_type" : "Holiday",
    "person" : {
      "preferences" : [
        {
          "documentId" : "TRECCS-00247656-160",
          "tags" : [
            "Bar-hopping",
            "Clubbing"
          ],
          "rating" : "4"
        },
        {
          "documentId" : "TRECCS-00211603-161",
          "tags" : [
            "Fast Food",
            "Restaurants"
          ],
          "rating" : "0"
        }
      ],
      "id" : 1234568,
      "age" : "47",
      "gender" : "male"
    },
    "location" : {
      "lat" : 59.95,
      "name" : "Saint Petersburg",
      "id" : 423,
      "lon" : 30.3
```

Venue Rec. Problem

- Input:
 - Start signal: app click, generic query,...
 - Context: a location or city
 - Profile: explicit (age, gender, ..) and implicit (earlier experience, life history on phone, ...)
- Output
 - One step: list of venues (with explanation why?)
 - OR interactive session leading to comprehensive plan

SLOGAN #1

Standard IR fails for
venue recommendation!

Overview of Part I

- Welcome
- Venue Recommendation
- No Geo Search
- No Collaborative Recommendation
- No One-Size-Fits-All Approach

Geo Search

- Exists for a few decades within IR
 - Selection of typical search engine queries
 - Where part of the query is or has a location
- E.g., “restaurant in Beijing, China”
- Query has exact answer, same for everyone
 - E.g., “taj mahal” linking to <http://www.tajmahal.gov.in/>

Geo IR tracks

- CLEF
 - GeoCLEF 2005-2008
 - <http://www.clef-initiative.eu/track/geoclef>
- NTCIR
 - Geo-Time task 2010-2011 (NTCIR 8 and 9)
 - <http://metadata.berkeley.edu/NTCIR-GeoTime/>

Approaches to Geo IR

- Typically using special resources / knowledge base
 - Explicit locations: cities, countries, ...
 - POI with GPS coordinates
 - Mostly about identifying the location part of the query, and mapping it to the resources
- Search engines provide APIs for this

Venue Rec. \neq Geo Search

- In Venue Recommendation
 - Query is a normal generic query *without* a location
 - e.g., “restaurant”, “bar”, “museum”
- But the result should take the location into account
 - Location is the context of the request
 - Venues too far will never be relevant
 - So different context means an entirely different result set

What Happened to
Grace?



About 50,700,000 results (0.73 seconds)

Saint Petersburg Hotels - Best Price Guarantee

Ad www.booking.com/Saint-Petersburg-Hotels

4.6 ★★★★★ rating for booking.com

Book your Hotel in Saint Petersburg

Free Cancellation · 24/7 Customer Service · Read Real Guest Reviews

World's Leading Online Travel Agency Website – World Travel Awards

Luxury Hotels

Deals & Special Offers

Most Popular Hotels

Best Reviewed Hotels

The State Hermitage Hotel - HistoricHotelsWorldwide.com

Ad www.historichotelsworldwide.com/

View The Best Historic Hotels In St. Petersburg. Book Online & Save!

Hotel In St Petersburg - Luxury Marriott Hotels Worldwide

Ad www.marriott.com/

Book Online At The Official Website

Ads

1054 St Petersburg Hotels

www.trivago.com/Hotel

Hotels St Petersburg from \$21.

Your Ideal Hotel in St Petersburg!

Holiday Inn St Petersburg

www.holidayinn.com/

Book your hotel in more than 100 countries on our official site.

Chemical Peels

www.divinedermatology.com/

Look & feel great in 2014 with a treatment at Divine Dermatology.

\$21 Hotel Rooms

www.orbitz.com/St_Petersburg_Hotels

Book St Petersburg Hotels & Save. Plan Your Next Escape with Orbitz.

\$39 Hotel In St Petersburg

www.dealbase.com/st-petersburg

Hotel In St Petersburg - 45% Off! Get Discounts on St. Pete Hotels

Hotel near st petersburg

Sun, Sep 6

Mon, Sep 7

Price Rating Hotel class

Hilton St. Petersburg Bayfront

4.0 ★★★★★ 37 reviews · 3-star hotel

1st St S · Downtown lodging with an outdoor pool, restaurant & Dali-themed bar, plus a free local shuttle.

\$143



Hilton St. Petersburg Bayfront, Saint Petersburg, FL



Search nearby: hotels · restaurants

Hilton St. Petersburg Bayfront

333 1st St S
St Petersburg, FL 33701
United States

[Directions](#) [Save](#)

hilton.com
(727) 894-5000

[Send to device](#)

Ad Book a room

Check-in Check-out

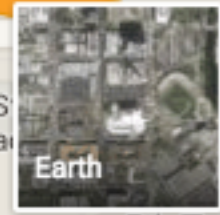
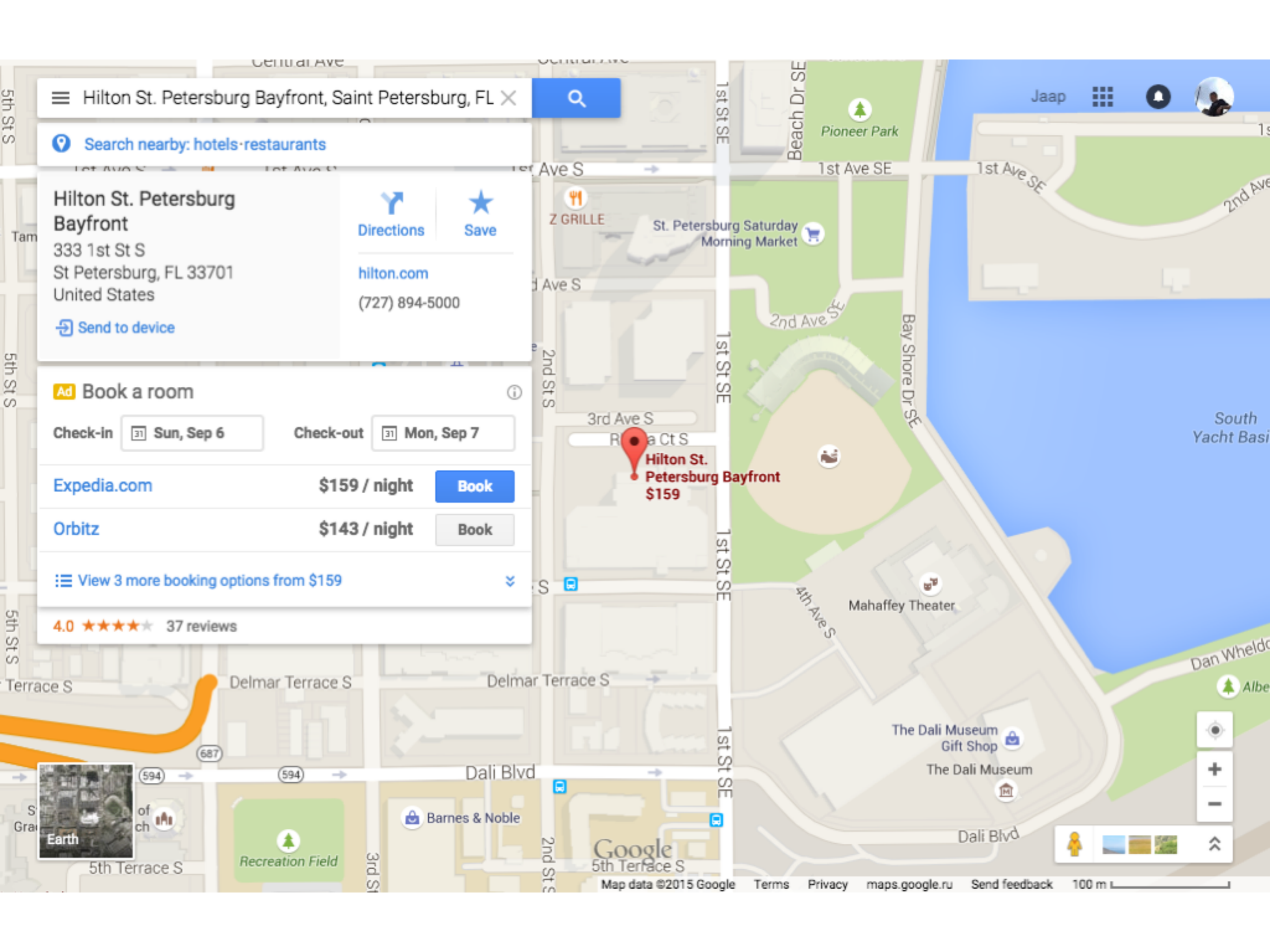
[Expedia.com](#) **\$159 / night** [Book](#)

[Orbitz](#) **\$143 / night** [Book](#)

[View 3 more booking options from \\$159](#)

4.0 ★★★★★ 37 reviews

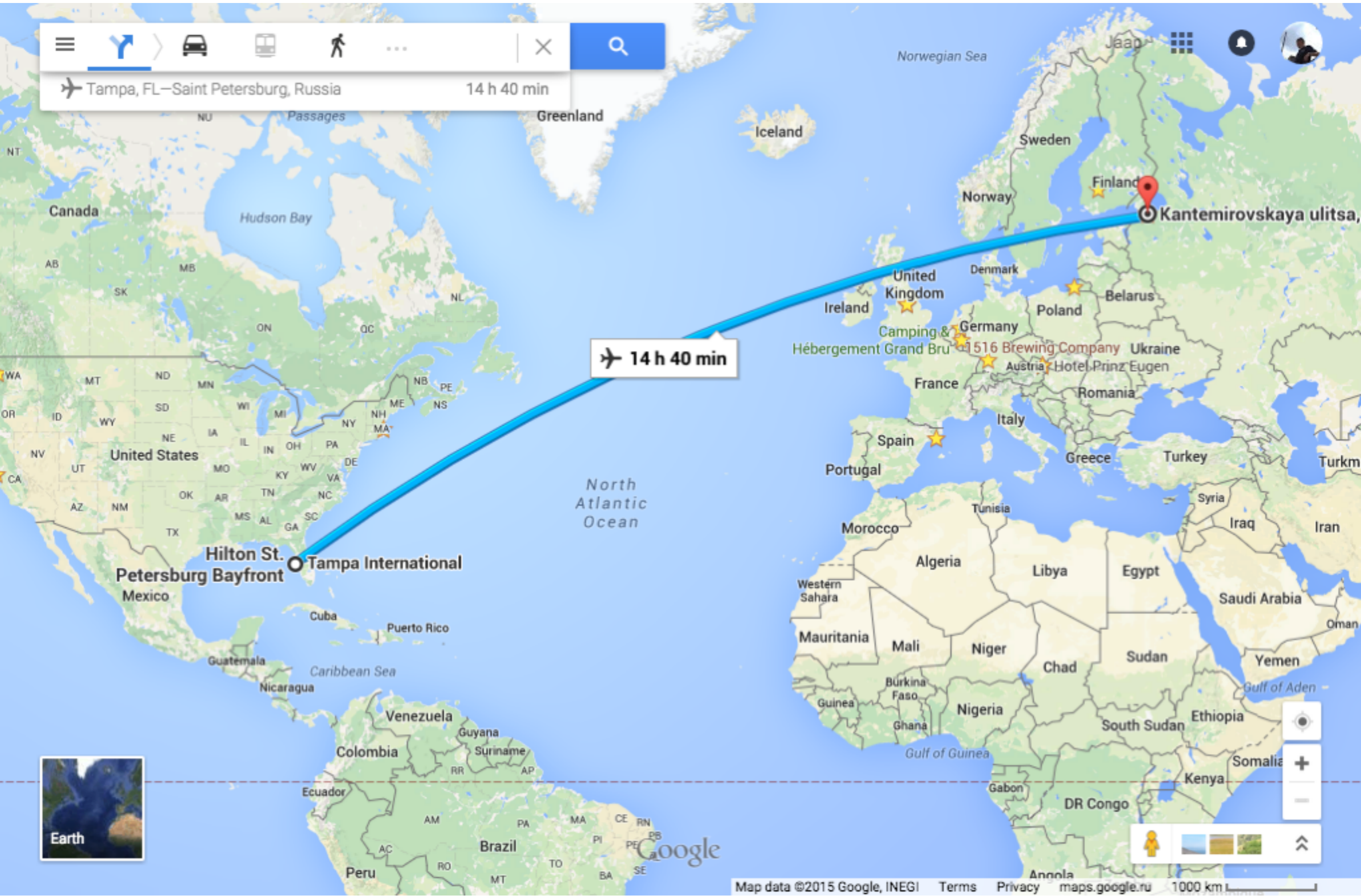
Hilton St. Petersburg Bayfront
\$159



Google

Navigation icons: Menu, Directions, Car, Train, Pedestrian, Search, Close.

Tampa, FL—Saint Petersburg, Russia 14 h 40 min



SLOGAN #2

Location is Context

Overview of Part I

- Welcome
- Venue Recommendation
- No Geo Search
- No Collaborative Recommendation
- No One-Size-Fits-All Approach

Recommender Systems

- Work on recommendation dominated by *Collaborative Filtering*
 - Input:
 - large set of ratings by many people
 - profile of a person X
 - Output:
 - Items Y unrated by X, that X will rate high
 - based on people *similar to X* giving high ratings to Y



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Discover beautiful things on Amazon, updated daily

SHOP



All ▾



Search Credit Cards ▸

Powered by Experian

Shop by Department ▾

Jaap's Amazon.com

Today's Deals

Gift Cards

Sell

Help



Hello, Jaap
Your Account ▾

Try Prime ▾

Wish List ▾

Cart



Delivering Smiles Daily

Try Prime and get FREE Two-Day Shipping on over 20 million items



Try Amazon Prime Today and Get Unlimited Fast, Free Shipping

[See more](#)



SONY

4K ULTRA HD TV


The all-new Sony 4K TVs are here.



Watch TV shows & movies anytime, anywhere.

Sorry, Netflix is not available in your country yet.
Enter your email & we'll let you know when Netflix is available.



Secure Server  Use of your email is subject to our [Privacy/Cookies](#)





Join • Login

lost.fm ^{BETA}

Search

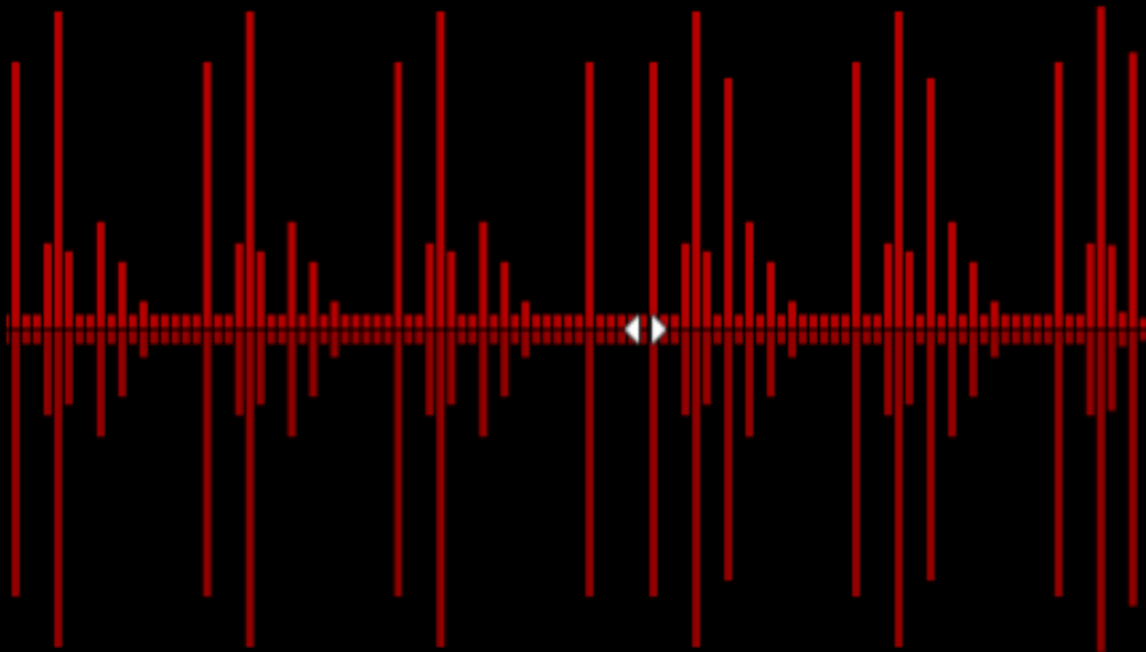
Live What's New Events Music Features

Hello and welcome to Last.fm

We bring together your favourite music services and join up listening, watching and sharing to connect your musical world. Below you can visualise, in real-time, the listening habits & trends of Last.fm's global community. Go Explore.

Scrobbling Now

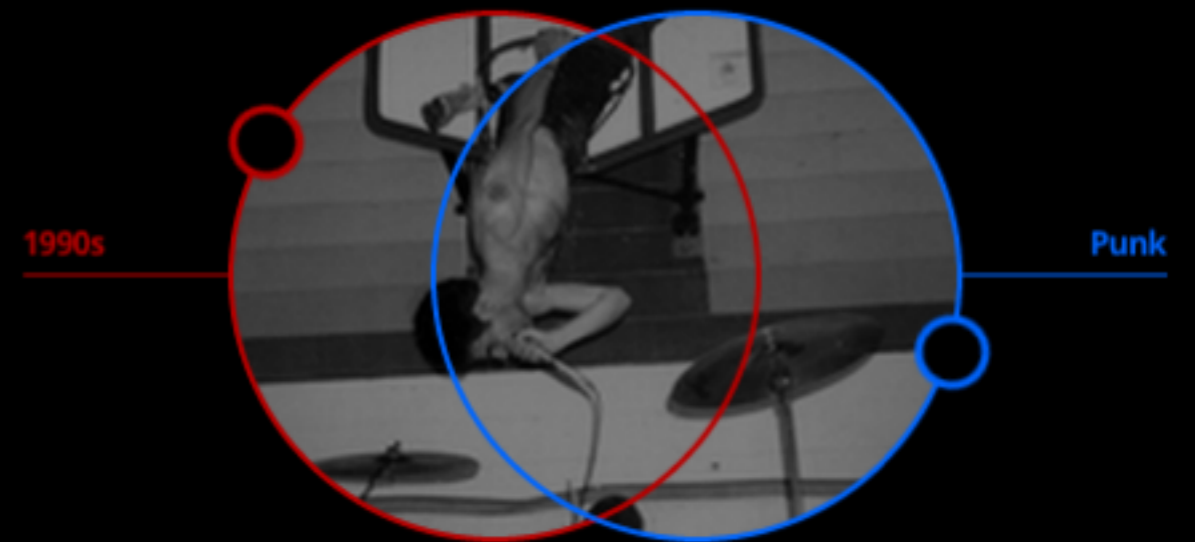
We're entirely powered by our community of music lovers
Scroll through to see what's being listened to right now



Drag to browse recent scrobbles

Public Vennemy

Want to hear some 80s Electronic? How about some millennial Metal?
Drag the circles to explore various sounds from different eras



Fugazi - Smallpox Champion

Plays: 158,011

Approaches to CR

- Standard is collaborative filtering
- Each person is a vector of ratings: like/dislike/unknown
- Just cosine similarity over vectors
 - Person most similar to X is X — pick the next
- Clustering/ML to learn patterns in the training data
 - to make predictions on unseen data

Venue Rec. \neq Collab. Rec.

- CR assumes rich profiles
- Suffers from cold start problems
 - New users
 - Sparse profiles
 - Most e-commerce have continuous cold start!
- Need to factor in search/content based rec.

Aspects of search *and* recommendation

- Not just serendipitous recommendation
 - E.g., a random book you like
 - But focused on a specific information need
- But no explicit query to match
 - E.g., look up the location of a know venue
 - Initiated by a generic query or App click (“Spb”)

SLOGAN #3

Need to Blend Search
and Recommendation

Overview of Part I

- Welcome
- Venue Recommendation
- No Geo Search
- No Collaborative Recommendation
- No One-Size-Fits-All Approach

Query Response Paradigm

- Prototypical Search
 - Input: short query
 - Output: ranked list
- Still dominates research *and* practice!
 - Current systems excel at short narrow scoped queries
 - Optimize against log data
 - Local optimum?

No more 10 blue Links



10 blue links



Jaap



Web

Shopping

Maps

Videos

Images

More ▾

Search tools



About 1,110,000,000 results (0.85 seconds)

SEO's Future: The 10 Blue Links Must Die | Acronym

www.acronym.com/bebrilliant/.../seos-future-the-10-blue-links-must-die/ ▾

SEO's Future: The 10 Blue Links Must Die. After traveling extensively in the U.K. and Europe, I've not had much chance until now to react to various comments ...

10 blue links: are they dead or alive in search? | Econsultancy

<https://econsultancy.com/.../64228-10-blue-links-are-they-dead-or-alive-...> ▾

Jan 30, 2014 - While many proclaim the death of '10 blue links', other experts suggest their own research confirms otherwise. Search is an ever evolving, ...

Beyond 10 Blue Links: The Future of Ranking - SlideShare

www.slideshare.net/.../beyond-10-blue-links-the-future-of-ranking ▾

Jul 10, 2013 - The SERP landscape is changing, and the future is already here. How the days of 10 blue links are over, 85 examples of rich SERPs, and what ...

Google: Slowly moving back to 10 blue links • Yoast

yoast.com › [WordPress](#) ▾ › [Yoast](#) ▾

Aug 29, 2014 - Author highlights, video snippets, ratings: they're all ways to stand out in a result that is otherwise just a "bland" 10 blue links. When we're being ...

SEO's Future: The 10 Blue Links Must Die | ClickZ

www.clickz.com/clickz/.../seos-future-the-blue-links-must-die/ ▾ ClickZ ▾

9,370,000 RESULTS Any time

Images of entertain me

bing.com/images

Related searches

Fun Games to Play When Bored

I Am Bored What Should I Do

About 17,600,000 results (0.51 seconds)

I'm bored entertain me | Funny Dirty Adult Jokes, Memes ...

jokideo.com/im-bored-entertain-me/

About This Post. Categories: Funny Pictures. Tags: funny cats, funny pictures, I'm bored entertain me. Post Date: May, 2012

Can we deal with whole search task?

Web **Entertain Me Lyrics - The Psychedelic Furs**

lyricsfreak.com > t/the psychedelic...entertain me...

Images Entertain me Entertain me Speak, entertain me Talk to me Don't talk to me Spell, pay for me Spell, spell lie for me Spell, spell want for me Sing...

Video **ENTERTAIN ME Lyrics - SOFT CELL**

Translate

```

<?xml version="1.0" encoding="UTF-16"?>
<queryplan end-time="2010-05-04T15:55:35.038Z" start-time="2010-05-04T15:55:35.026Z"
  xDB-version="xDB main@621581">
  <XQueryQuery accumulatedTime="10" calls="1" pagesRead="5" values="1">
    <querytext>declare option xhive:index-debug 'true';
declare option xhive:queryplan-debug 'true';
declare option xhive:pathexpr-debug 'true';
(: declare option xhive:ignore-indexes 'mp1';:)
let $othello docs := /feed/doc[. contains text 'Othello'],
    $books := for $book in /bib/book[author/last = 'Stevens'] return $book
return <res>{ $othello docs, $books }</res></querytext>
    <functions/>
    <variables/>
    <modules/>
    <let accumulatedTime="10" calls="1" location="query:5:1" pagesRead="5"
      type="item()*" values="1" variable="othello docs@0">
      <path accumulatedTime="6" calls="1" location="query:5:21" numExpr="2"
        onlyChildren="true" pagesRead="3" returnBlobs="false"
        usesNotOrOr="false" values="0">
        <indexplans>
          <indexplan context="/" node="primary">
            <lookup accumulatedTime="2" calls="1" conditions="1"
              index="mp1" lookup="server-side" pagesRead="2" type="11"
              values="0"/>
          </indexplan>
        </indexplans>
      <path path=".../child::feed/child::doc[. contains text Othello]">
        <root accumulatedTime="0" calls="1" location="query:5:21"
          pagesRead="0" values="0"/>
      </path>
    </let>
  </XQueryQuery>
</queryplan>

```

Interactively construct a (hidden) query

```

type="item()*" values="2" variable="book@1">
<path accumulatedTime="1" calls="1" location="query:6:28"
  numExpr="2" onlyChildren="true" pagesRead="2"
  returnBlobs="false" usesNotOrOr="false" values="2">
  <indexplans>
    <indexplan context="/" node="primary"/>
    <indexplan context="/dewiki20m.xml" node="primary"/>
    <indexplan context="/bib.xml" node="primary"/>
  </indexplans>
  <path path=".../child::bib/child::book
    [child::author/child::last[. = &quot;Stevens&quot;]]">
    <root accumulatedTime="0" calls="1" location="query:6:28"
      pagesRead="0" values="0"/>
  </path>

```

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Hey Siri, what's the best sushi place in town?

Talk to Siri as you would to a friend and it can help you get things done — like sending messages, placing calls, or making dinner reservations. You can ask Siri to show you the Orion constellation or to flip a coin. Siri works hands-free, so you can ask it to show you the best route home and what your ETA is while driving. And it's connected to the world, working with Wikipedia, Yelp, Rotten Tomatoes, Shazam, and other online services to get you even more answers. The more you use Siri, the more you'll realize how great it is.

And just how much it can do for you.



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Intelligent personal assistant

From Wikipedia, the free encyclopedia

An **intelligent personal assistant** is a [software agent](#) that can perform tasks or services for an individual. These tasks or services are based on user input, location awareness, and the ability to access information from a variety of online sources (such as weather or traffic conditions, news, stock prices, user schedules, retail prices, etc.). Examples of such an agent are [Apple's Siri](#), [Brina](#), [Google's Google Now](#), [Amazon Echo](#), [Microsoft's Cortana](#), [Samsung's S Voice](#), [LG's Voice Mate](#), [BlackBerry's Assistant](#), [SILVIA](#), and [HTC's Hidi](#).

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Description [\[edit\]](#)

According to [venture capitalist](#) [Chi-Hua Chien](#)^[1] of [Kleiner Perkins Caufield & Byers](#), examples of tasks that may be performed by a smart personal agent-type of [Intelligent Automated Assistant](#)^[2] include schedule management (e.g., sending an alert to a dinner date that a user is running late due to traffic conditions, update schedules for both parties, and change the restaurant reservation time) and personal health management (e.g., monitoring caloric intake, heart rate and exercise regimen, then making recommendations for healthy choices).

Intelligent personal assistant technology are enabled by the combination of [mobile devices](#), [application programming interfaces](#) (APIs), and the proliferation of [mobile apps](#). However, intelligent automated assistants are designed to perform specific, one-time

Your Phone Knows You!

- Your work moved online and into the clouds
- Your personal life moved as well
- Everything you ever did is there...

Related Work: Facebook Graph Search

SLOGAN #4

Search is getting
personal

Wrap Up Part 1

- Venue recommendation: personalized, contextualized, complex constraints
- Location is only part of the problem: not the same as geographical search
- Profiles matter but are sparse: not the same as collaborative recommendation
- Extreme personalization: no one-size-fits-all approach.
 - Interactive complex search: no query-response paradigm

Four Slogans

- #1: Standard IR fails for venue recommendation!
- #2: Location is Context
- #3: Need to Blend Search and Recommendation
- #4: Search is getting personal