

Visual Search Engine Evaluation

Efthimis N. Efthimiadis

efthimis@u.washington.edu

**Information School
University of Washington**

Agenda

- Motivation
- Aims & Objectives
- Methodology
- Results
- Conclusions

Background & Motivation

- The presentation of information by SE is fundamental to their usability.
- Most SEs present a simple ranked list.
- Visualization of results is active & growing research area
- A number of SEs that use a visual or hybrid UI exist:
e.g., Kartoo, Quintura, Grokker, Mooter, WebBrain, PageBull, Snap
- few comparative usability studies of visual search engines

Comparative usability evaluation studies of visual search engines

- visually impaired users of Google, Yahoo, HotBot, Vivisimo & Kartoo (Andronico *et al.*, 2004).
- visual vs.textual display of information using the Google, Yahoo, Grokker & Kartoo (da Silva & Freitas, 2006)
- treemap display of results was compared with Google, SRC, Kartoo & Clusty (Chu *et al.*, 2007).

Comparative usability evaluation studies of SE are complicated (White & Marchionini, 2006; Käki & Aula, 2008):

- search is highly domain-dependent and user-dependent
- variation between individual's information-seeking habits adds complexity to the selection of both appropriate experimental conditions & test metrics.

Aim

- investigate how people search when using a visual user interface (UI) compared to the traditional text-based UI.

Goals & Objectives:

- (a) compare how people search using three types of UIs (visual, text, hybrid);
- (b) identify user satisfaction level with each system for completing a search;
- (c) establish how the visualizations help/hinder users with the search/navigation process;
- (d) study how the query formulation and reformulation process is affected by the visual UIs.

METHODOLOGY

Methodology

- Participants
- Tasks
- Search engines
- Study design
- Data collection Instruments

Participants

| | Undergraduate Students | Graduate Students |
|---------------|------------------------|-----------------------|
| <i>n</i> = 24 | 12 (4 male, 8 female) | 12 (6 male, 6 female) |
| Age Range | 18-20: 9 | 21-25: 2 |
| Count | 21-25: 2 | 26-30: 5 |
| | 46-50: 1 | 31-35: 3 |
| | | 36-40: 1 |
| | | 41-45: 1 |

- Convenience sample
- Recruited from UW student population
- Grads: LIS and Information Management
- Undergrads: non-iSchool students taking an iSchool intro to tech class

Search Tasks

- Developed three scenarios
(TREC interactive track, and Borlund & Ingwersen, 2000)
- Query Types used (Broder 2002):
 - Informational
 - Transactional

Scenarios

1. Aspirin
2. Browser security plug-in
3. Tour de France

Scenario 1 - Aspirin

- A family friend, a woman in her mid-50's, is concerned about heart attacks because of her family history.
- She's heard that taking a daily dose of aspirin can reduce the risk of heart attacks in some patients, but she has also heard that Aspirin has certain side effects.
- She will be visiting her doctor in a few days and wants to find information about this in order to have an educated conversation with her physician.
- To help her you volunteered to search and identify at least two pros or cons of taking large doses of Aspirin.

Scenario 2 – Security Plug-In

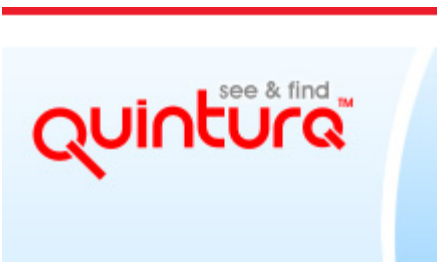
- You are concerned about protecting sensitive personal data and maintaining privacy when you use the internet.
- Plug-ins are small, free-downloadable programs that work with your Internet Browser such as Firefox or Internet Explorer.
- You use the Firefox web browser but you realize that there are more than 150 Firefox plug-ins related to privacy and security.
- Can you find authoritative information that recommends five to ten of the best plug-ins for your use?

Scenario 3 – Tour de France

- You live in Seattle, WA.
- Next summer you're planning to take a bicycle trip that will follow the route of the annual "Tour De France" bike race.
- You're interested in several pieces of information.
 1. How much will it cost to ship your bicycle to Paris?
 2. Identify some package tours that might include lodging, ground transportation, a guide and the price ranges.
 3. Find narratives and tips from people who have made this trip in the past.

Baseline = 

Visual UI = 

Hybrid = 

SEARCH ENGINES

STUDY DESIGN

Study Design

- within-subjects design
- Latin square design to account for learning effects for both systems and topics

User {u#}, System {g, k, q}, Scenario {1, 2, 3}

| | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|
| u1 | g1 | k2 | q3 | u4 | k1 | q2 | g3 | u7 | q1 | g2 | k3 |
| u2 | g2 | k3 | q1 | u5 | k2 | q3 | g1 | u8 | q2 | g3 | k1 |
| u3 | g3 | k1 | q2 | u6 | k3 | q1 | g2 | u9 | q3 | g1 | k2 |

- no user training on SE prior to study
 - assumption Web SE need to be intuitive and no training should be required to search (Hearst 2007)

DATA COLLECTION INSTRUMENTS

Questionnaires

- Data was gathered using Catalyst, a web-based survey tool
 - questions on a 9-point scale
- Initial survey (x1);
 - gathered demographic data and information about the subject's computer use, web search experience, history & habits
- Pre-search survey (x3);
 - gathered information on the subject's prior knowledge of the scenario, after reading the scenario
- Post-search survey (x3);
 - gathered information about the subject's experience with a search engine and scenario
- Final survey (x1);
 - gather comparative information about the three search engines & search process

Recording user/SE interaction

The logo for DéjàClick by AlertSite is located on the left side of the slide. It consists of an orange semi-circle containing the text "DéjàClick" in a white, stylized font, with "by AlertSite" in a smaller, white, sans-serif font below it.

DéjàClick™
by AlertSite

plug-in for the Firefox browser.

- Records entire session with Audio & Video, allows playback
- Collects information on:
 - keywords used to search,
 - URLs visited,
 - time it takes to complete the search task.

4- Save xml file of recording here

1- Begin recording

3- Click green button to stop recording

2- Indicates that recording is on

The screenshot shows a Mozilla Firefox browser window displaying the Wired Science website. A recording toolbar is overlaid on the browser interface. The toolbar contains several icons: a power button, a folder icon, a save icon, a star icon, a green recording button, a pause button, a play button, a search icon, a document icon, a checkmark icon, a pencil icon, a printer icon, a globe icon, and a help icon. A status bar at the bottom of the toolbar shows 'Recording... (3 events recorded)', 'Ready', a timer at '00:01:08', and 'Errors: 0 Warnings: 0'. The browser window shows the Wired Science website with two article thumbnails: '1. Researchers Glue Accelerometer, Flash Memory to "Flying Lemur"' and '2. After Long Delays, Atlantis Shuttle Launches'. The browser's address bar shows the URL 'http://blog.wired.com/.../image.html?/photos/uncategorized/2008/02/07/170421main_08pd0203small.jpg'. The browser's status bar shows 'zotero' and 'Open Notebook'.

Overview of the

SEARCH ENGINE USER INTERFACES

KartOO Home

The screenshot shows a Mozilla Firefox browser window titled "KartOO visual meta search engine - Mozilla Firefox". The address bar contains "http://kartoo.com/". The browser's menu bar includes "File", "Edit", "View", "History", "Bookmarks", "Tools", and "Help". The toolbar shows navigation buttons (back, forward, home, stop, refresh) and a search engine dropdown set to "Google". A bookmarks bar is visible with items like "Most Visited", "Firefox Help", "Firefox Support", "Plug-in FAQ", and "Furl It".

The main content area has a dark blue background. At the top center, the word "KartOO" is displayed in a large white font. To the right of the text is a cartoon character with a red, green, and yellow hat and a purple body. Below the title is a search bar with the text "Search: Tour de france bicycling vacations" and an "ok" button. Underneath the search bar are two radio buttons: "english pages" (which is selected) and "world wide web".

At the bottom of the page, there are several links: "Legal Note", "Bookmark", "Intranet products", and "KartOO Blog". Below these are more links for regional versions: "KartOO.com", "KartOO FR", "KartOO UK", "KartOO ES", "KartOO IT", "KartOO DE", "KartOO PT", and "KartOO BR". The copyright notice "(c) KartOO" is centered at the bottom.

The status bar at the very bottom of the browser window shows the word "Done".

KartOO Results Page



The screenshot shows the KartOO search engine interface in Mozilla Firefox. The search query is "tour de france bicycling vacations", which has yielded 8,530 results. The main content area features a large, stylized map of France with various keywords and website thumbnails overlaid. The keywords include "leader years", "cycling", "provence burgundy", "travel", "bike", "trips", "roads", "strong italy breed erienced", "guided ride offers corsica", "prices", and "bicycling". Website thumbnails include "www.vbt.com", "www.eurocyclor.com", "www.ridestrongtours.com", "www.ridestrongbiketours.com", "www.traveldeals.sidestep.com", "www.suntimes.com operator", "www.veloehappe.com", "www.duvine.com", "www.bikeriderstours.com", "www.realadventures.com", and "www.CiclismoClassico.com".

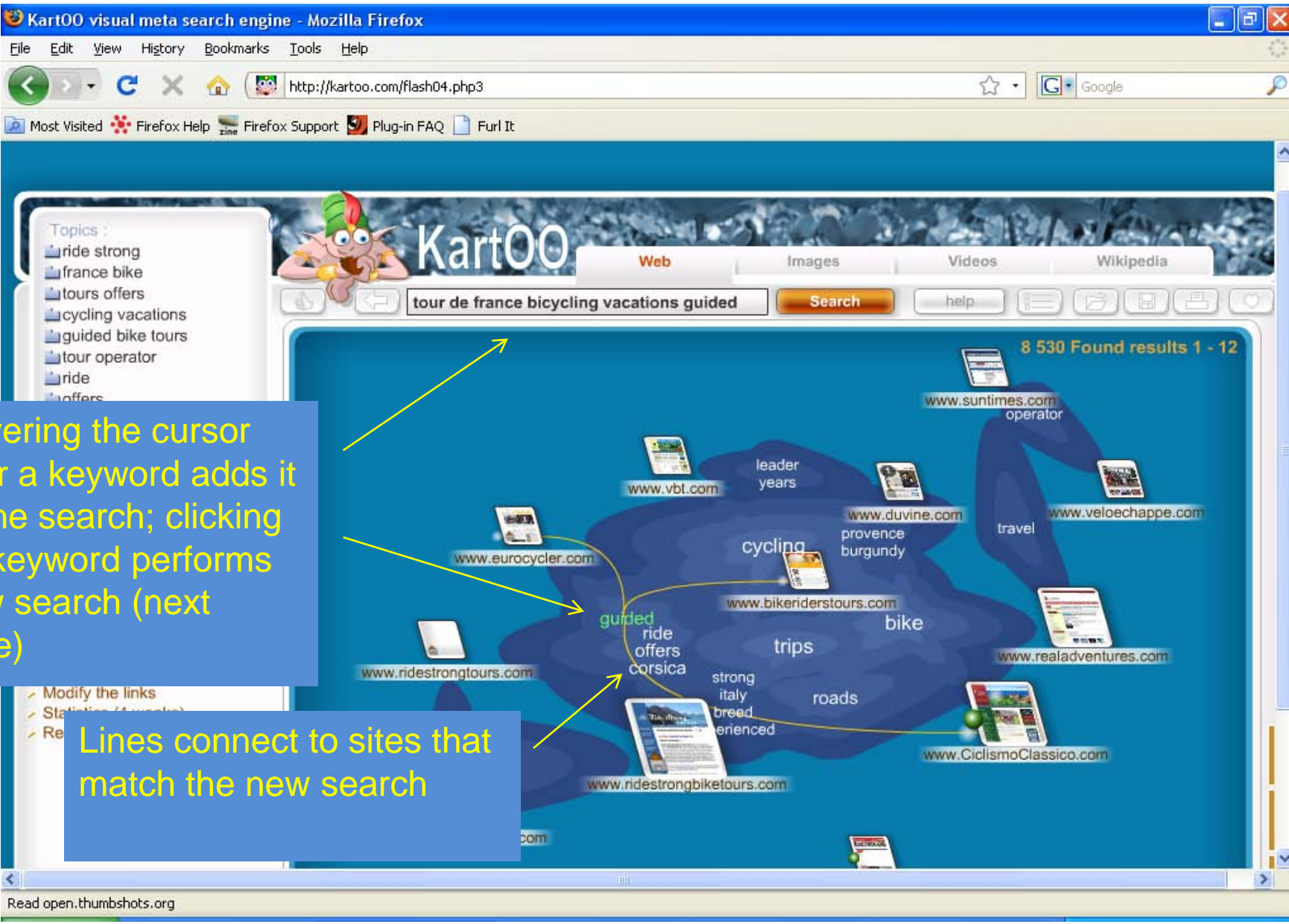
On the left side, there is a "Topics" list with categories like "ride strong", "france bike", "tours offers", "cycling vacations", "guided bike tours", "tour operator", "ride", "offers", "corsica", "strong", "italy", "breed", "experienced", "bike", "trips", "cycling", and "prices". Below this is a "Sponsor" section with three entries:

- France Bike Tour Packages**: Find Guided Bike Tours Of France. Packages For All Skill Levels. <http://www.CiclismoClassico.com>
- France Bicycling Vacation**: Make your vacation the best it can be. Get club member benefits. <http://Backroads.com>
- Bicycling France Vacation**: Compare vacation prices from over 120 top websites and save up to 70%. <http://TravelDeals.SideStep.com>

At the bottom of the browser window, the address bar shows "Read open.thumbshots.org".

White text are suggested keywords for search refinement; thumbnails are sites that match the current search

KartOO Results Page: Using keyword refinement



Hovering the cursor over a keyword adds it to the search; clicking on keyword performs new search (next slide)

Lines connect to sites that match the new search



KartOO Results Page: Using keyword refinement

The screenshot shows the KartOO visual meta search engine interface. The browser window title is "KartOO visual meta search engine - Mozilla Firefox". The address bar shows the URL "http://kartoo.com/flash04.php3". The search bar contains the query "tour de france bicycling vacations guided" and shows "2 420 Found results 1 - 12". The main content area displays a large blue map of Europe with various search results represented as small thumbnail images and text labels. A yellow arrow points to the search bar. A blue box with yellow text "Search with added keyword" is overlaid on the left side of the map. The left sidebar contains a list of topics and a sponsor section.

Topics :

- bike tours
- france bike
- european bike
- bicycling tours
- cycling vacations
- bicycling trips
- giro d italia
- walking tour

trips

- provence
- giro
- ride
- walking
- burgundy

Sponsor

France Bike Tour Packages
Find Guided Bike Tours Of France. Packages For All Skill Levels.
<http://www.CiclismoClassico.com>

Tour de France Trips Official Tour Operator. See/Ride the Tour de France. Vip access.
<http://www.customgetaways.com>

Tour De France Cycling Vacation
Tour de france cycling vacation. Your Dream Vacation Awaits.
<http://FranceVacations.Travel-Wise.com>

Transferring data from open.thumbshots.org...

KartOO visual meta search engine - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://kartoo.com/flash04.php3

Most Visited Firefox Help Firefox Support Plug-in FAQ Furl It

Wikipedia

420 Found results 1 - 12

Read open.thumbshots.org

France Bike Tours, France Bicycling Tours & Cycling Vacations France ...
Tours, Bicycling Trips & Tours In France. Biking Tours In France. ...
Randonnee Tours
ProvenceSelf Guided Cycling Tour. Provence: Avignon, France Bike Tours
...

http://www.realadventures.com/vacations/3709_bike-

- Open this page
- Related sites
- More pages of this site
- Site homepage
- Modify / Watch (Ctrl-click)
- Erase
- Copy

burgundy

provence

corsica

ride

trips

www.discoverfrance.com walking

www.bikeriderstours.com

www.ridestrongbiketours.com

FranceVacations.Travel-Wise.com

www.landrys.com bike

www.bikeride.com

www.realadventures.com

www.CiclismoClassico.com

www.eurocyclier.com

www.customgetaways.com



Quintura Search Results

Quintura - Mozilla Firefox

File Edit View History Bookmarks Tools Help del.icio.us

http://www.quintura.com/

Getting Started Gmail - Inbox

beta see & find **Quintura** Find tour de france bicycling vacations Web ima friend!

Settings | Help | Add to Firefox

Embed Share Save

training
native planet adventure
bike
sporting goods travel
offers **B**icycling de french
france
Bicycling
vacations
tour ride
packages
europe trips
grand canyon
mont ventoux

1. **Ride Strong: Bicycle Tours and Bike Vacations in France, Italy ...**
Ride Strong Bike Tours offers a new breed of bike trips for experienced cyclists at affordable prices to the back roads of France, Italy, Corsica, Pyrenees, Tour de ...
<http://www.ridestrongbiketours.com/>, 17Kb

2. **Duvine Adventures**
Offers group or customized personal bike and wine tours in Burgundy, France.
<http://www.duvine.com/>, 29Kb

3. **Cycling Girona, Triathlon Training Camps, Tour de France Cycling, Alpe ...**
 Tour de ... with guided cycling vacations and training programs with ... March 2005, **Bicycling**. Terms and Conditions | Refund Policy | Contact Us ...
<http://www.eurocycler.com/>, 37Kb

4. **Cycling Vacations with Bike Stops, Bike Tours ...**
<http://www.bikenderstours.com/trips/france/>, 33Kb

6. **France Bicycle Tours, French Bike Tours, France Cycling Tours ...**
It all awaits you on a VBT vacation! VBT France Bike Tours. Loire Valley 2008 ... We have been the leader in **Bicycling vacations** for 37 years. ...
<http://www.vbt.com/france-bicycle-tour.aspx>, 118Kb

7. **Tour de France Tours - Bicycling Along the Tour de France Route**
... Armstrong's success in the **Tour de France** has renewed US interest in **bicycling**. ...
European Vacation Planning Map. Europe Travel 101 - Before you Go ...
http://goeurope.about.com/...e_Tour_de_France_Route.htm, 18Kb

Done zotero Open Notebook

Default setting uses 2/3 of page for Google-like list of search results

Search terms are highlighted with blue text. Suggested search refinements are in black or gray, depending on expected relevance



Quintura: Using the term cloud for search refinement

Quintura - Mozilla Firefox

File Edit View History Bookmarks Tools Help del.icio.us

http://www.quintura.com/

Getting Started Gmail - Inbox

beta see & find **Quintura** Find Settings | Help | Add to Firefox

Web Images Video Amazon

Embed Share Save

Results found — 366000

1. [Divine Adventures](#)
Offers group or customized personal bike and wine **tours** in Burgundy, **France**.
<http://www.duvine.com/>, 29Kb

2. [Bicycling Vacations, Bicycling Travel Agents and Tour Operators ...](#)
Bicycling Vacations, Tours, Packages and Itineraries ... Mykonos **tour** featuring sightseeing and many activities in **France**, Spain, Monaco, ...
<http://www.tripology.com/travel/activity-bicycling/>, 80Kb

3. [Bicycling Tours and Bicycling Vacations : Tours.com](#)

5. [France Bicycling Tours : Tours.com](#)
Tour division of Air **France**, providing air-inclusive **vacation packages** for the ... Specializes in ski **tours**, ecotours, adventure travel and multisport **vacations**. ...
http://www.tours.com/..._vacations/france/bicycling.htm, 47Kb

6. [France Vacations, France Travel Agents and Tour Operators | Tripology.com](#)
France Vacations, Tours, Packages and Itineraries ... **Bicycling**. Golfing. Horseback Riding. Kayaking. Mountain Biking. Running. Skiing/Snowboarding ...
<http://www.tripology.com/...ons-tours-packages-country/>, 133Kb

7. [Ride the Etape du Tour with Velo Echappe'](#)
Etape du **Tour** Cycling Challenge **Vacations**. 2008 Etape du **Tour Packages** ... Home | **Tour de France** Cycling **Vacations** | Frequently Asked Questions |Contact Us ...
http://www.veloechappe.com/etape_polka/default.asp, 16Kb

de
france
bicycling
vacations
tour
packages

Hovering over a term adds it to the query. The list is also updated to provide a preview of the results. However, this is slow and often confused users.

Done

University of Geneva, March 18 2010

zotero Open Notebook



Quintura: Using the term cloud for search refinement

Quintura - Mozilla Firefox

File Edit View History Bookmarks Tools Help del.jcio.us

http://www.quintura.com/

Getting Started Gmail - Inbox

beta see & find Quintura

Find Search

Web Images Video Amazon

Embed Share Save

Results found — 366000

1. [Duvine Adventures](#)
Offers group or customized personal bike and wine **tours** in Burgundy, France.
<http://www.duvine.com/>, 29Kb

2. [Bicycling Vacations, Bicycling Travel Agents and Tour Operators ...](#)

3. [Bicycling Tours and Bicycling Vacations : Tours.com](#)
Looking for a **Bicycling vacation**? Take a **Bicycling** trip to thousands of worldwide destinations, and find a **Bicycling vacation package** that's just right for you.
http://www.tours.com/tours_vacations/bicycling.htm, 51Kb

4. [| Backroads Tour de France |](#)

5. [France Bicycling Tours - Tours.com](#)
Tour division of Air France, providing air-inclusive **vacation packages** for the ... Specializes in ski **tours**, ecotours, adventure travel and multisport **vacations**. ...
http://www.tours.com/..._vacations/france/bicycling.htm, 47Kb

6. [France Vacations, France Travel Agents and Tour Operators | Tripology.com](#)
France Vacations, Tours, Packages and Itineraries ... **Bicycling**. Golfing. Horseback Riding. Kayaking. Mountain Biking. Running. Skiing/Snowboarding ...
<http://www.tripology.com/...ons-tours-packages-country/>, 133Kb

7. [Ride the Etape du Tour with Velo Echappe'](#)
Etape du **Tour** Cycling Challenge **Vacations**. 2008 Etape du **Tour Packages** ... Home | **Tour de France** Cycling **Vacations** | Frequently Asked Questions |Contact Us ...
http://www.veloechappe.com/etape_polka/default.asp, 16Kb

Transferring data from www.virgin-vacations.com... University of Geneva, March 18 2010

zotero Open Notebook 34

Clicking back arrow takes you back to the previous search

Clicking on term performs search with added keyword





Quintura search results for "tour de france bicycling vacations".

Search bar: Find tour de france bicycling vacations

Results found — 1060000

1. Ride Strong - Bicycle Tours and Bike Vacations in France, Italy ...
 Ride Strong Bike Tours offers a new breed of bike trips for experienced cyclists at affordable prices to the back roads of France, Italy, Corsica, Pyrenees, Tour de ...
<http://www.nidestrongbiketours.com/>, 17Kb

2. Divine Adventures
 Offers group or customized personal bike and wine tours in Burgundy, France.
<http://www.divine.com/>, 29

3. Cycling Girona, Triathlon Tri...
 Tour de ... with guided cyclists
 2005, Bicycling. Terms and conditions
<http://www.eurocyclers.com/bike-tours>

4. Cycling Vacations with Ride Strong
 Ride Strong Bike Tours offers affordable prices to the back roads of France, Italy, Corsica, Pyrenees, Tour de ...
<http://www.nidestrongtours.com/>

5. Bike Riders Tours - Luxury
 Bike Riders tours offers bicycle tours in France, Italy, Corsica, Pyrenees, Tour de ...
<http://www.bikeriders.com/>

Navigation: Embed, Share, Save

Categories: sporting goods, training, adventure, french, native planet, offers, de, france, cycling, vacations, packages, mont ventoux, grand canyon

KartOO search results for "tour de france bicycling vacations".

Search bar: tour de france bicycling vacations

8 360 Found results

Network diagram showing connections between websites and terms:

- www.vbt.com
- www.suntimes.com
- www.duvine.com
- www.realadventures.com
- www.bikenderstours.com
- www.eurocyclers.com
- www.nidestrongtours.com
- www.CiclismoClassico.com
- www.veloehappe.com
- www.ridestrongbiketours.com

Terms: leader years, provence burgundy, guided trips, cycling, bike, travel, operator, roads, prices, strong italy breed experienced, ride offers corsica

Google search results for "tour de france bicycling vacations".

Search bar: tour de france bicycling vacations

Results 1 - 10 of about 321,000 for [tour de france bicycling vacations](#). (0.51 seconds)

Award-Winning Bike Tours (Sponsored Links)
www.Backroads.com/Bike-Tours Backroads Worldwide Biking Tours. Request a Free Catalog.

Ciclismo Classico
www.CiclismoClassico.com Transforming Lives Through Active Travel Since 1988.

VBT Bicycling Vacations
www.VBT.com Best value in bicycling vacations. Request your free catalog today.

Tour de France Cycling Vacations: Tour de France Bicycle Tours ...
 Ride a stage of the 2008 Tour de France. Celebrating our 11th year anniversary, Velo Echappe.com specializes in Tour de France & Italian cycling vacations, ...
www.veloehappe.com/ - 13k - [Cached](#) - [Similar pages](#) - [Note this](#)

Tour de France bike tours
 Companies doing bike tours for the '04 Tour de France.
www.chainreactionbicycles.com/francetdftourcompanies.htm - 59k - [Cached](#) - [Similar pages](#) - [Note this](#)

Fly to France for \$381 (Sponsored Links)
 Save BIG with Air France®. Book before Oct 31st!
www.AirFrance.us
 Seattle-Tacoma, WA

Tour de France Bike Tours
 Exclusive Cycling Tours Join us! See the Race - Ride with a Pro
www.martyjemison.com

Deluxe Bicycle Tours
 Unique North American destinations. Superb bicycle tour leaders & inns!
www.GoSojourn.com

Tour de France
 Official Tour Operator. VIP access

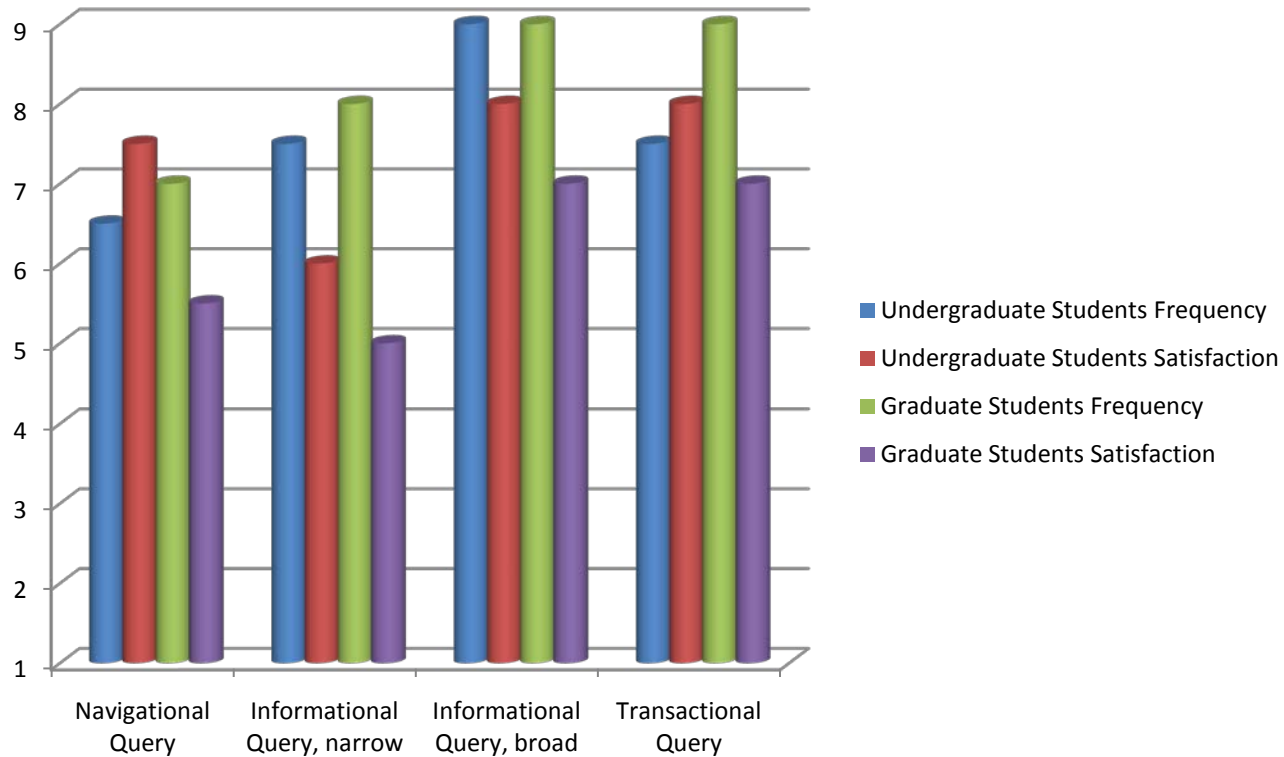
All three search engines provide correct answers with the initial search. KartOO confuses users – who don't realize they've answered the question! Quintura less so.

- Frequency & Satisfaction of web search
- Interaction time
- # of queries
- # of terms
- Familiarity with scenario topic
- % of correct responses
- Perceived satisfaction w/results & SE
- Testimonials
- Would you search Kartoo/Quintura again?

Selective presentation of

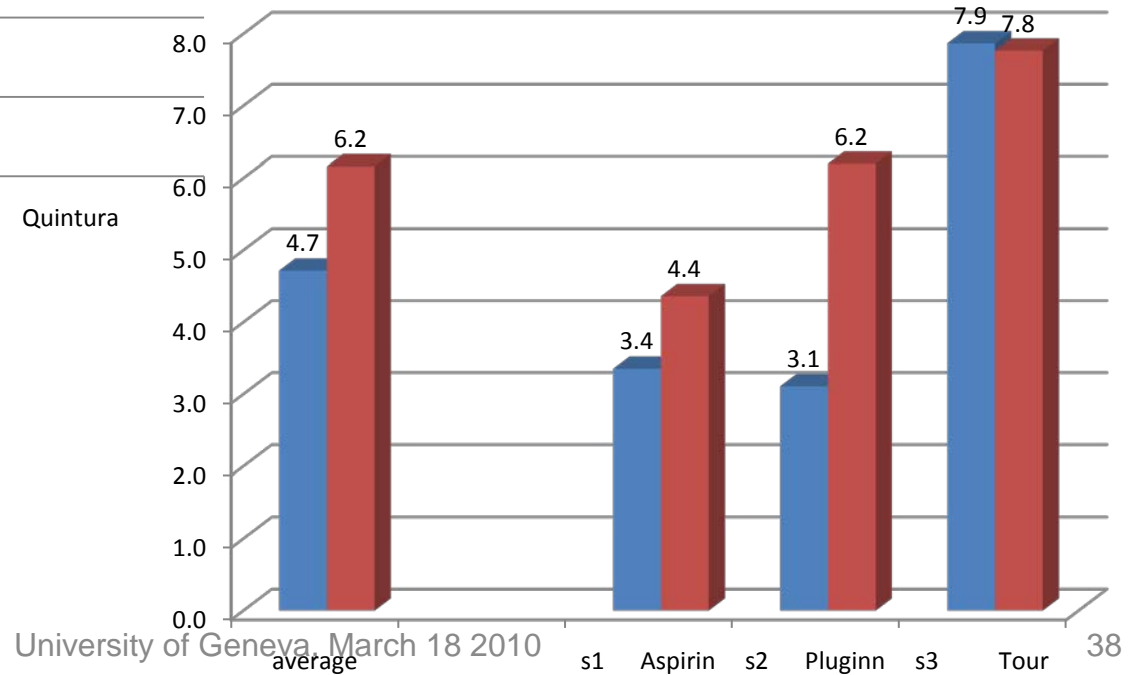
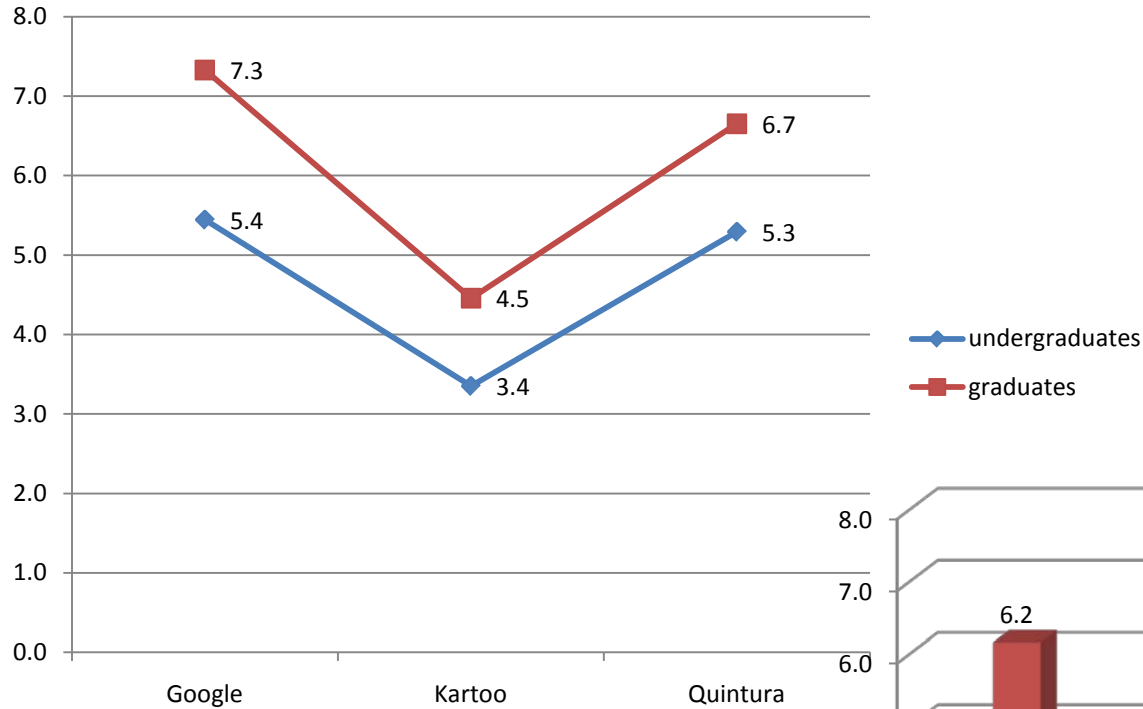
RESULTS

Frequency & satisfaction with web search (self-reported)



- Scale on y-axis: 1 (no satisfaction/low frq) – 9 (high satisfaction)
- Frequency: Grad (3) > Undergrad (1)
- Satisfaction: Grad (4) < Undergrad (2)

Average Interaction Time per SE, Scenario, and Group (in Minutes)



Queries: selected examples

Average number of query terms per scenario:
s1 = 5; s2 = 4; s3 = 3.7

s1

- aspirin (single word)
- aspirin heart attack
- aspirin "large dose" "pros and cons"
- "heart attacks" aspirin site:.gov
- pros and cons of taking Aspirin for heart attacks (natural language)
- "heart attacks" aspirin ("daily dose" | dosage) "side effects" pros cons inurl:webmd (advanced)

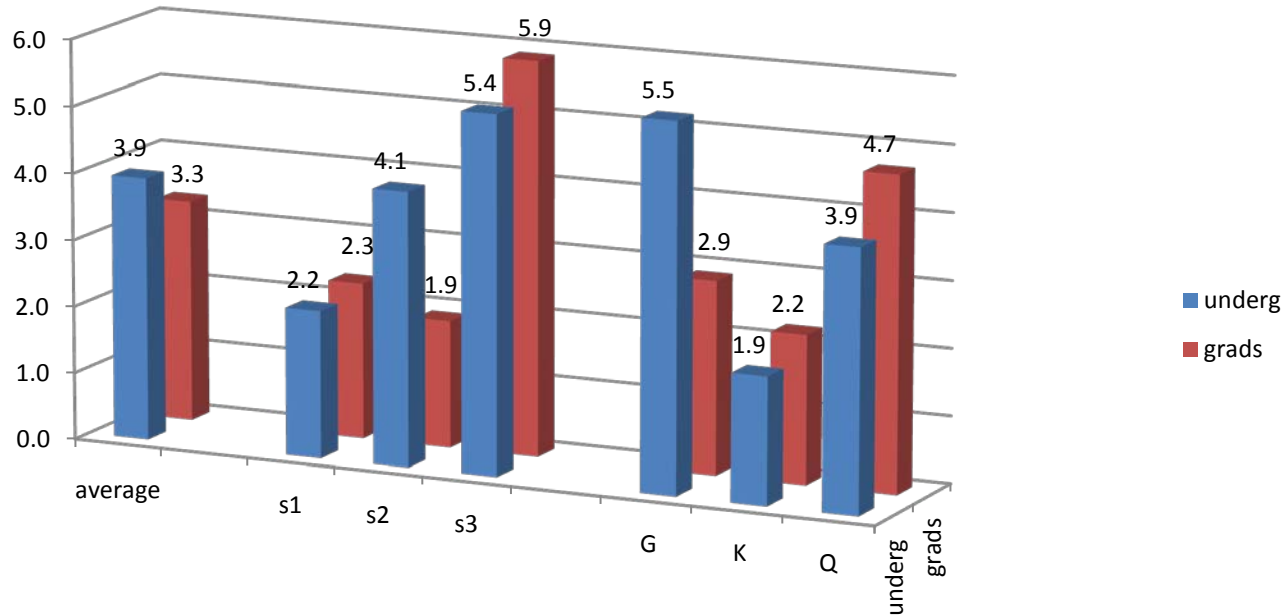
s2

- best plug-ins
- Firefox plug-ins
- firefox privacy plug in
- best security plug-ins for web browsers
- firefox plugins security recommendation

s3

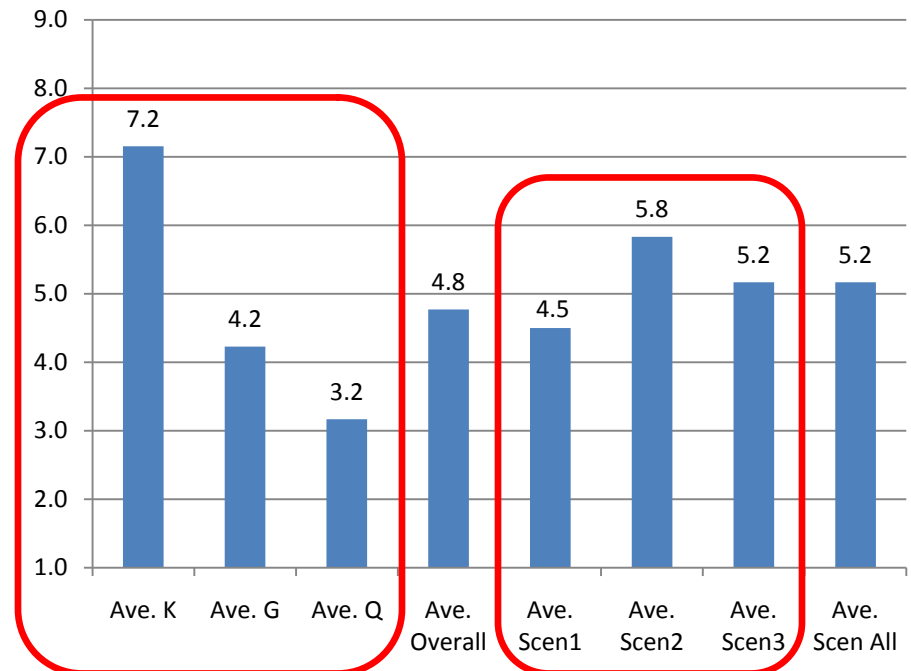
- tour de france
- paris
- Bicycle shipping cost
- bicycle shipping seattle paris
- USPS bulk shipping
- france transportation cost info
- Price to ship bicycles from seattle to paris
- Bicycle tours , "Tour De France"
- tips for people who have traveled to Paris for Tour De france
- packages tours include lodging , ground transportation , guides and price ranges in Paris

Average number of queries



- Overall
- By scenario
- By search engine

- Familiarity with the subject matter (9=high)
 - 1 (aspirin use) = 5.3
 - 2 (privacy plug-ins) = 4.3
 - 3(tour de France) = 4.1
- average difficulty per SE and scenario (9=most difficult)



Correctness of results by scenario & by subject group

| Scenario | Undergraduates | Graduate Students |
|-------------------|----------------|-------------------|
| 1, Aspirin - pros | 58% | 55% |
| 1, Aspirin - cons | 33% | 45% |
| 2, Plug-in | 8% | 36% |
| 3, shipping | 8% | 18% |
| 3, tours | 58% | 27% |
| 3, narratives | 33% | 18% |

median perceived satisfaction with the search results and with the search engine

| Perceived Satisfaction | Undergraduates | | Graduate Students | |
|------------------------|----------------|------------|-------------------|------------|
| | Results | SE | Results | SE |
| 1, Aspirin, google | 8.5 | 9.0 | 5.5 | 6.5 |
| 1, Aspirin, kartOO | 4.5 | 3.5 | 5.0 | 4.5 |
| 1, Aspirin, quintura | 7.5 | 8.5 | 7.0 | 7.0 |
| 2, plug-in, google | 6.5 | 7.0 | 3.0 | 7.0 |
| 2, plug-in, kartOO | 8.0 | 3.5 | 1.0 | 1.0 |
| 2, plug-in, quintura | 7.0 | 6.0 | 5.5 | 5.5 |
| 3, Tour de F, google | 4.5 | 7.0 | 5.5 | 6.5 |
| 3, Tour de F, kartOO | 3.0 | 2.0 | 2.0 | 2.0 |
| 3, Tour de F, quintura | 6.5 | 7.0 | 5.0 | 5.5 |

9 point scale, with 1 being not at all satisfied, and 9 being completely satisfied

Do you have any additional comments regarding the search engine?

KartOO

- It doesn't give me any clear indication of actual relevance or the real content of the page to which I would be navigating.
- I'm sorry to say that the "visual" aspect of this search interface doesn't seem helpful...
- It gave me a headache.
- The layout is terrible. You have to search manually through the search results. Not good.
- ...who made that?
- The layout was significantly different than what I'm used to seeing with a search engine. That threw me off for a second, but it was also relatively easy to adjust to the "new" layout style. I liked that the layout was based on graphics, rather than simply text.
- I liked the amoebas. Also, I thought the groupings were helpful in choosing sites.

Do you have any additional comments regarding the search engine?

Quintura

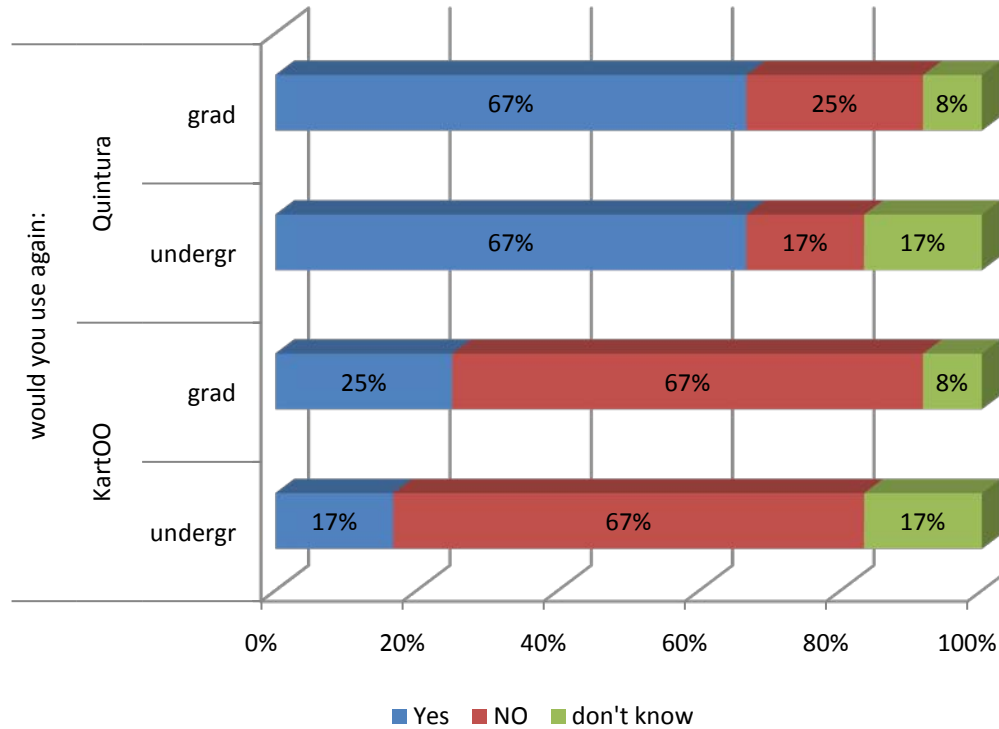
- I did not like it at all. Visually confusing and a ridiculous waste of technology.
- Aside from the cloud on the left, I did not find it noticeably different from Google.
- "cloud" idea is interesting, but no one will use it if the google way is right there.
- The right side of the search engine was similar to google, therefore I felt used to it. the left side was completely difficult.
- I preferred the dual display of top hits on the right and the graphic display of subject relationships on the left. On the right I had the option of getting directly to sites. On the left, it supported serendipitous exposure to related topics. If I had difficulty articulating my search question, this contextualization of related topics could assist in refining how I phrased my terms.

Do you have any additional comments regarding the search engine?

Google

- Even though the search didn't go well, I was still satisfied with it.
- Google is my favorite search engine.
- Typically, I'm very satisfied with Google, but in this case, it was very frustrating.

Would you use K or Q again?



participants had most difficulty with Kartoo,
they felt at home when searching with Google's text-based UI
they opted to use the text-UI of Quintura because of
familiarity, and either ignored or criticized the term cloud.

CONCLUDING REMARKS

Visual Search: summary of comments

Searchers had:

- Difficulties interacting with graphical UIs
- Difficulties in understanding what is displayed & how to relate the “visualization” to the “text search” they are familiar with
- Increased frustration with search interaction & search results

THANK
YOU



Questions ???

