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CQAVis: Visual Text Analytics for Community Question Answering

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Community Question Answering



- Means for communities to **share information** and to collectively satisfy their **information needs**.
- Forums organize content in the form of **question–comment threads**
- A **question** posed by a user may be answered by a possibly **long list of comments** from other users.

Community Question Answering: Example

Which is the best bank in Qatar?

[What is the best bank to open an account? | Qatar Living](#)

Can anyone recommend me a **bank** that has **good** interest rates on loans and credit cards? I'm considering Doha **Bank** because of the Lulu card.

www.qatarliving.com/forum/.../what-best-bank-open-account

Labeled [Forums](#)

[Please recommend good bank in Qatar | Qatar Living](#)

Kindly give me an idea what is the **best bank in Qatar?** for Current account, credit card, car loan, in terms of customer service also. my salary is 10k- Thanks ...

www.qatarliving.com/.../please-recommend-good-bank-qatar

Labeled [Forums](#)

[Best Credit Card in Doha | Qatar Living](#)

(PS I understand that i would either need to shift my salary to the **bank** or put a ... are credit cards i came across in **Qatar** (they are not perfect but **good**).

www.qatarliving.com/forum/qa

Labeled [Forums](#)

[any advice?i want to change bank](#)

im planning to change my **ban**

www.qatarliving.com/.../any-advice

Labeled [Forums](#)

[Islamic Banks in Qatar |](#)

Any idea about **good** Islamic banks in **Qatar**? Services / products wise? Recommendation / experiences Is there any Islamic services @ commercial **bank** ?

www.qatarliving.com/forum/advice-help/.../islamic-banks-qatar

Labeled [Forums](#)

[Commercial Bank - Cheat | Qatar Living](#)

As per your opinion, which is the **good bank in qatar?** ... it happened to me in Doha bank regarding car installment, and whenever the due date is Saturday they ...

www.qatarliving.com/forum/qatar.../commercial-bank-cheat

Labeled [Forums](#)

What is the best bank to open an account?



By 9chimera11 • 2 years 4 months ago.

Seems like all the banks need the salary to be credited to their accounts [where I came from that was not a necessity]

Please recommend good bank in Qatar

Can anyone

So far I



By anonymous • 4 years 11 months ago.

Kindly give me an idea what is the best bank in Qatar? for Current account, credit card, and car loan, in terms of customer service also.

Thanks in advance

SHARE

TWEET

18 comments

SHARE

TWEET

4 comments



By d3litetfulpinay • 3 years 2 weeks ago.

any advice?i want to change bank,which one is good?

im planning to change my bank,any suggestions?is barwa bank good?thanks.

SHARE

TWEET

3 comments

Banking in Qatar - Which one to choose



By bawa_099 • 2 years 9 months ago.

Hello,

I recently joined an IT firm in Qatar and have been asked to choose any bank for my salary.

The prominent names I have heard are

Doha Bank / QNB / HSBC / Few Islamic Banks.

My ID is still under processing and I need a bank which can offer my ATM & Cheque book.

I can issue PDC's for rental accommodation.

I am looking for advice on which Bank to go for.

Thanks.

-easy transaction

rates

- good service

- easily accessible

The above

holder all

All the best

SHARE

TWEET

14 comments

Sort by rating

Ratings calculated automatically using technology developed by



By qatman • 2 years 9 months ago.

QNB

Our Approach

1) Combine **Search** and **NLP** techniques to:

- Find **related question** threads in the forum
- Rank the **comments** within each question thread

2) Introduce a novel **interactive visual interface** to:

- Navigate through the **comments** to satisfy the **information needs**

Outline



- **Analyze** user requirements in CQA forums
identify use cases, tasks and design needs

- **The system**



- Combine **NLP** and **search** techniques
- Design CQAVis using **user-centered** methodologies

- **Evaluate** CQAVis:



- Online user study among hundreds of users in an
ecologically valid way
- **Lessons** learned from the study

User Requirements Analysis

- Analyzing existing HCI literature

- What types of questions are asked?
 - *Many questions are subjective in nature*
- Who answers and why?
 - *Slower responses*
- What is the quality of answers?
 - Lots of variability

- Interviewing **Qatar Living admins and users**

- Many naive users
- Users want to find useful answers quickly
- Difficulty in finding good answers
- Screen space constraints

Summary of requirements:

- We need a comment **classification** technique to find good answers
- Interface should support users in identifying **good answers** quickly
- Interface should be **simple** and **intuitive**.

Outline



- **Analyze** User requirements in CQA forums
identify use cases, tasks, and design needs

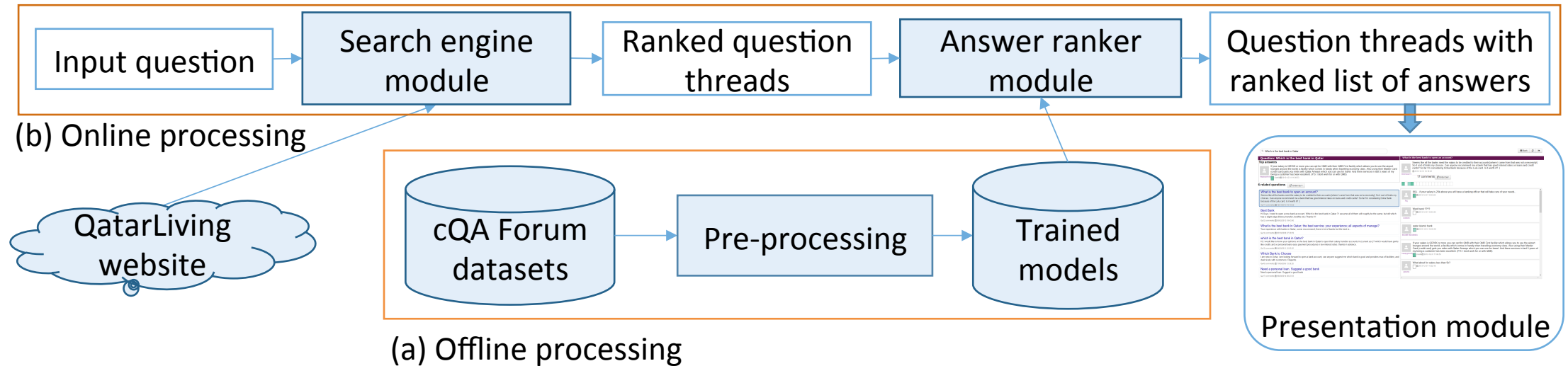


- **The system**
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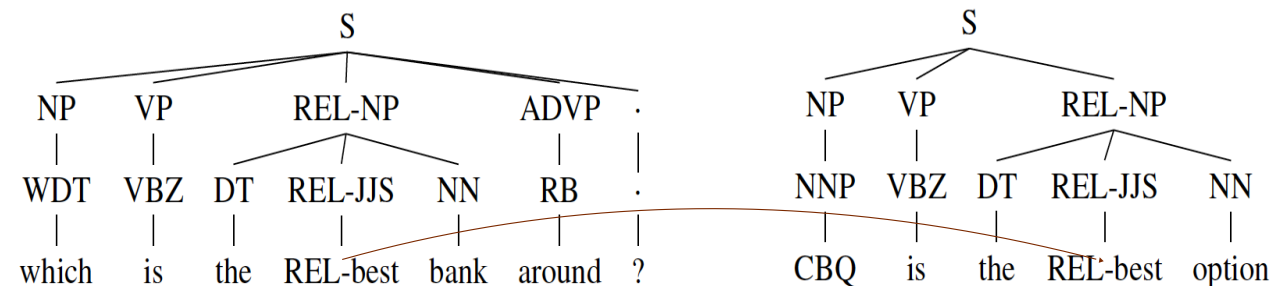
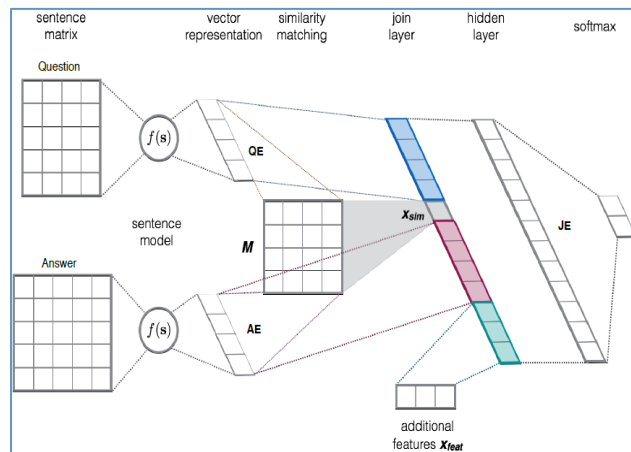
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System Overview



NLP Analysis: The Comment Classifier

- **The task:** Given a thread question and a list of comments associated with it, the task of the comment classifier is to assign a relevance score to each of the comments according to their goodness at answering the thread question.
- **SVM Classifier:**
 - Linear kernels over numeric and embedding features
 - Tree kernel over shallow syntactic trees of question and comment



NLP Analysis: Classification Performance

SemEval 2016 Dataset

- *Train:*
 - 2,669 questions
 - 17,900 comments
- *Test:*
 - 700 questions
 - 7,000 comments

SemEval 2016 Results

| A | MAP | AvgRec | MRR | F ₁ | Acc |
|----------|-------|--------|-------|----------------|-------|
| Baseline | 59.53 | 72.60 | 67.83 | - | - |
| Average | 73.54 | 84.61 | 81.54 | - | - |
| Our | 77.66 | 88.05 | 84.93 | 66.16 | 75.54 |
| Top | 79.19 | 88.82 | 86.42 | 64.36 | 75.11 |

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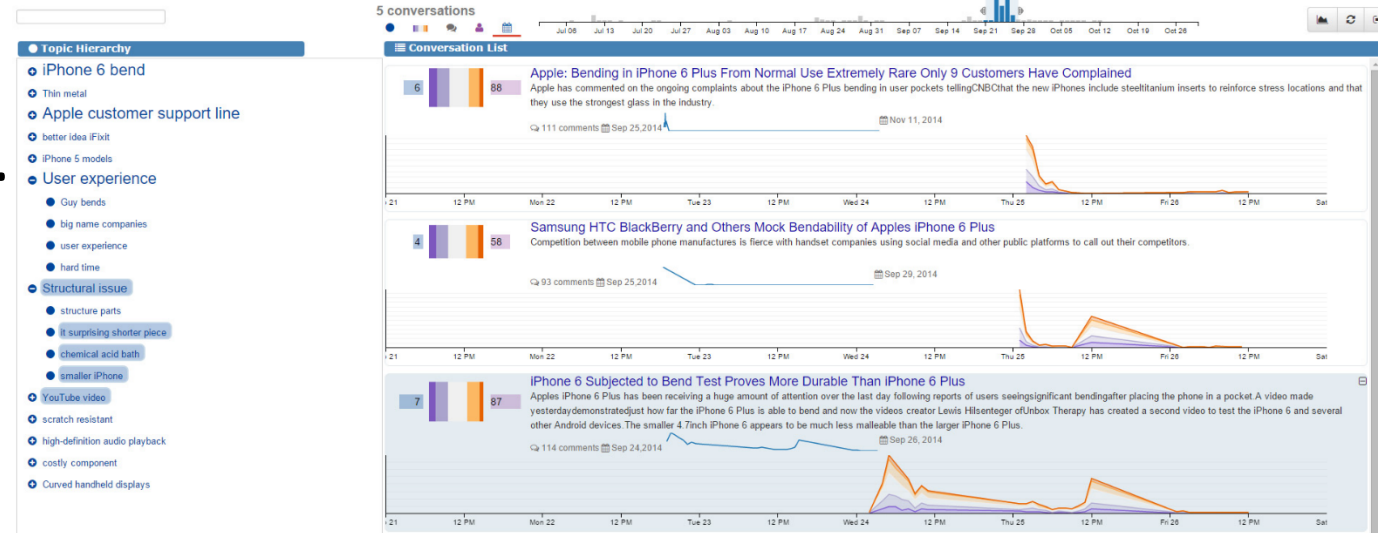


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Design of CQAVis

- Guided by previous work on visualizing multiple conversations.
- Simplified and tailored to CQA data and tasks.

MultiConVis



Enamul Hoque and Giuseppe Carenini (*IUI 2016*).

Designing CQAVis: What Information Should be Presented?

q: Which is the best bank in Qatar?

q₁: what is the best bank in qatar for small business

C1₁: IBQ.if your salary is 25k above you will have...

C1₂: West bank ????

...

C1_n: Thanks CBQ; I in fact applied for an account...

q₂: What is the best bank to open an account?

C2₁

C2₂

...

C2_n

...

q_m: Need a personal loan. Suggest a good bank

Cm₁

Cm₂

...

Cm_n

Related question

- **relatedness score** w.r.t. new question [0,1]

Comment

- **classifier score** normalized to a value between [0,1]

Top answers

- combine **relatedness** and **classifier** scores

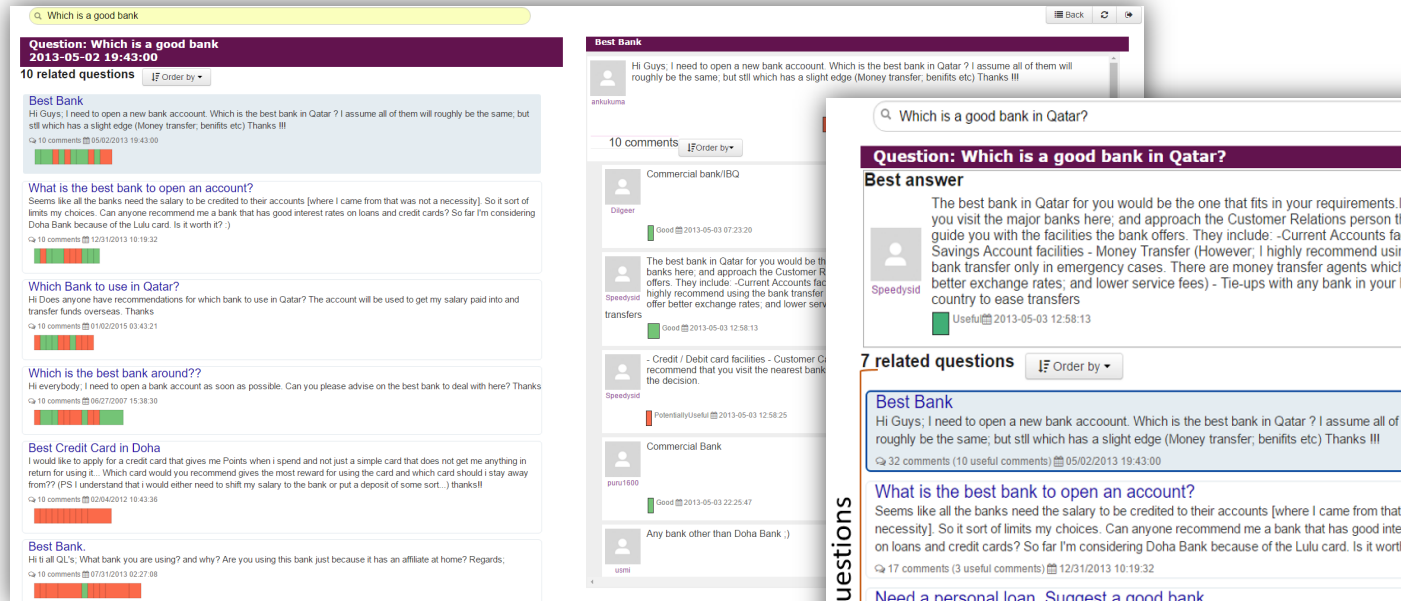
Qatar Living forum dump (from March 2016):

Total conversations: 202,304

Total comments: 2,043,022

Avg. comments per conversations: **10.21**

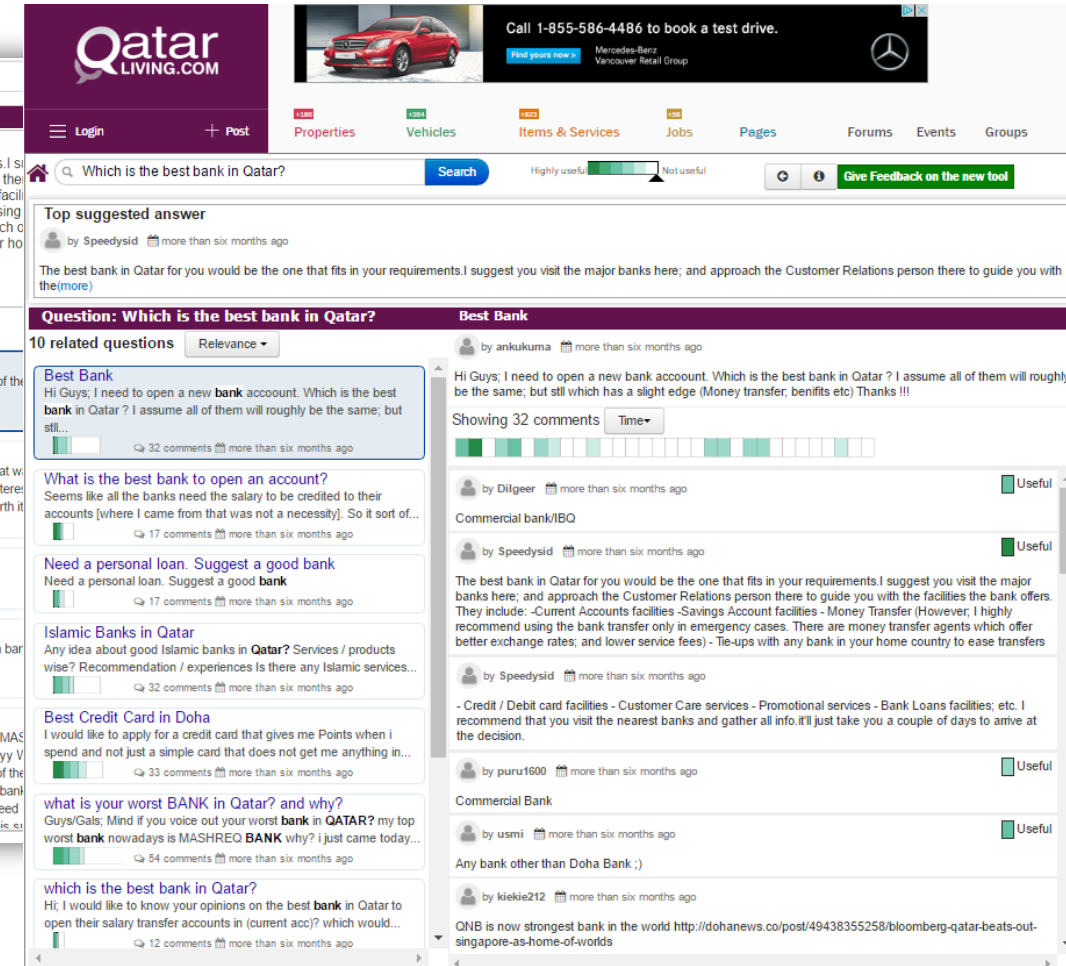
Design of CQAVis: Iterative Prototyping



V1 (based on training corpus)

Related questions

V2 (first live demo)
lyas.qcir.org/demo



V3 (Qatar Living beta version)
Qatarliving.com/betasearch

Final Design of CQAVis

Related questions


Back

Refresh

Share

Question: Which is a good bank in Qatar?

Best answer



Speedysid

The best bank in Qatar for you would be the one that fits in your requirements. I suggest you visit the major banks here; and approach the Customer Relations person there to guide you with the facilities the bank offers. They include: -Current Accounts facilities -Savings Account facilities - Money Transfer (However; I highly recommend using the bank transfer only in emergency cases. There are money transfer agents which offer better exchange rates; and lower service fees) - Tie-ups with any bank in your home country to ease transfers

Useful

2013-05-03 12:58:13

7 related questions

Best Bank

Hi Guys; I need to open a new bank account. Which is the best bank in Qatar ? I assume all of them will roughly be the same; but still which has a slight edge (Money transfer; benefits etc) Thanks !!!

32 comments (10 useful comments)

05/02/2013 19:43:00

What is the best bank to open an account?

Seems like all the banks need the salary to be credited to their accounts [where I came from that was not a necessity]. So it sort of limits my choices. Can anyone recommend me a bank that has good interest rates on loans and credit cards? So far I'm considering Doha Bank because of the Lulu card. Is it worth it? :)

17 comments (3 useful comments)

12/31/2013 10:19:32

Need a personal loan. Suggest a good bank

Need a personal loan. Suggest a good bank

17 comments (3 useful comments)

09/29/2014 08:23:53

Which Bank to Choose

I am new in Doha; I am looking forward to open a bank account; can anyone suggest me which bank is good and provides max of facilities; and deal nicely with customers. Regards.


40 comments (7 useful comments)

11/05/2006 13:36:20

what is your worst BANK in Qatar? and why?

Guys/Gals; Mind if you voice out your worst bank in QATAR? my top worst bank nowadays is MASHREQ BANK why? i just came today to reset my PIN code for my credit card then suddenly it sayyyyyy WE CHARGE 50.00 Qrs to re-issue a PIN code! i said what the....? it is suppose the right of each of their client to change their PERSONAL CODE however they made a point to charge? wow! btw mashreq bank now got the worst customer services as well.. they are just good in throwing flowery words

Best Bank




ankukuma

Hi Guys; I need to open a new bank account. Which is the best bank in Qatar ? I assume all of them will roughly be the same; but still which has a slight edge (Money transfer; benefits etc) Thanks !!!

2013-05-02 19:43:00

32 comments


Order by



Dilgeer

Commercial bank/IBQ

2013-05-03 07:23:20




Speedysid

The best bank in Qatar for you would be the one that fits in your requirements. I suggest you visit the major banks here; and approach the Customer Relations person there to guide you with the facilities the bank offers. They include: -Current Accounts facilities -Savings Account facilities - Money Transfer (However; I highly recommend using the bank transfer only in emergency cases. There are money transfer agents which offer better exchange rates; and lower service fees) - Tie-ups with any bank in your home country to ease transfers

Useful


2013-05-03 12:58:13



Speedysid

- Credit / Debit card facilities - Customer Care services - Promotional services - Bank Loans facilities; etc. I recommend that you visit the nearest banks and gather all info. it'll just take you a couple of days to arrive at the decision.


2013-05-03 12:58:25



puru1600

Commercial Bank

2013-05-03 22:25:47



Any bank other than Doha Bank ;)

Any bank other than Doha Bank ;)

2013-05-04 07:04:50

Thread Overview

Conversation view

Live Demo

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User Evaluation of CQAVis

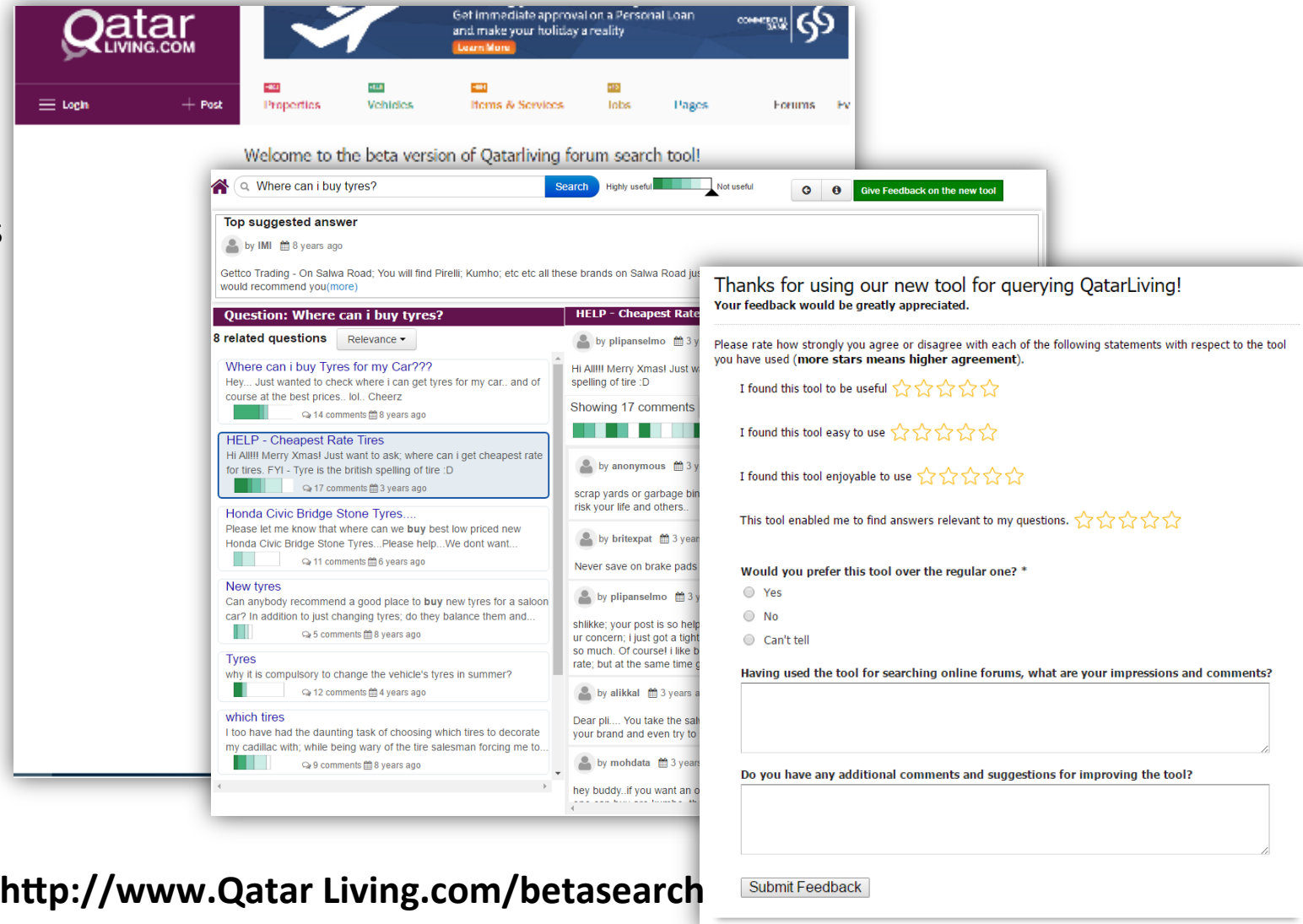
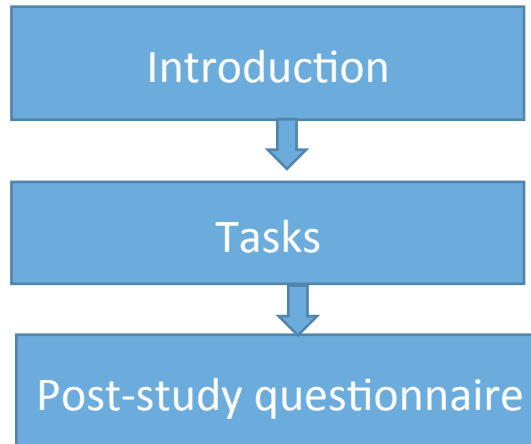
Online User Study

Real users, real data and real tasks

- To **enhance ecological validity**
- Uncontrolled, less incentives for users

Pilot (lab) study

- To revise the study



<http://www.Qatar Living.com/betasearch>

Online User Study: Results Analysis

- **User statistics:**
 - 768 participants
- **Data Collection:**
 - Query log
 - Interface actions
 - Questionnaires (measured on Likert scale)
 - Open-ended comments

User Evaluation of CQAVis: Questionnaires

- Subjective ratings
From **56 users**

Thanks for using our new tool for querying QatarLiving!

Your feedback would be greatly appreciated.

Please rate how strongly you agree or disagree with each of the following statements with respect to the tool you have used (**more stars means higher agreement**).

I found this tool to be useful ☆☆☆☆☆

I found this tool easy to use ☆☆☆☆☆

I found this tool enjoyable to use ☆☆☆☆☆

This tool enabled me to find answers relevant to my questions. ☆☆☆☆☆

Would you prefer this tool over the regular one? *

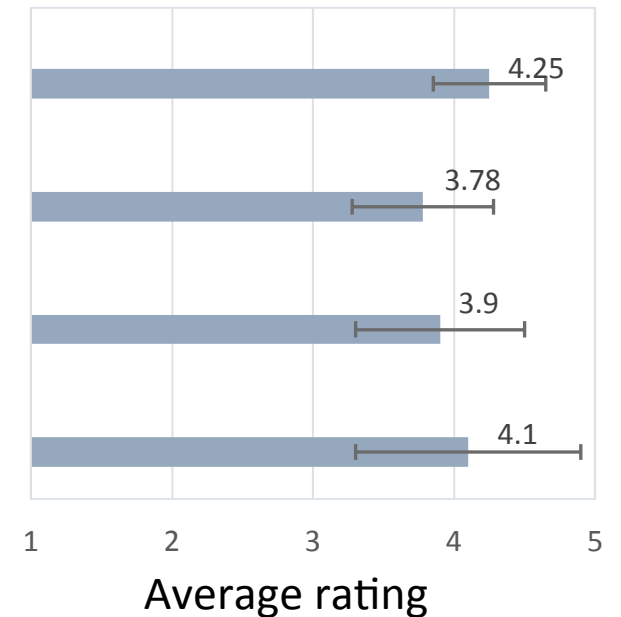
- ☐ Yes
☐ No
☐ Can't tell

This tool enabled me to find answers relevant to my questions

I found this interface enjoyable to use

I found this tool easy to use

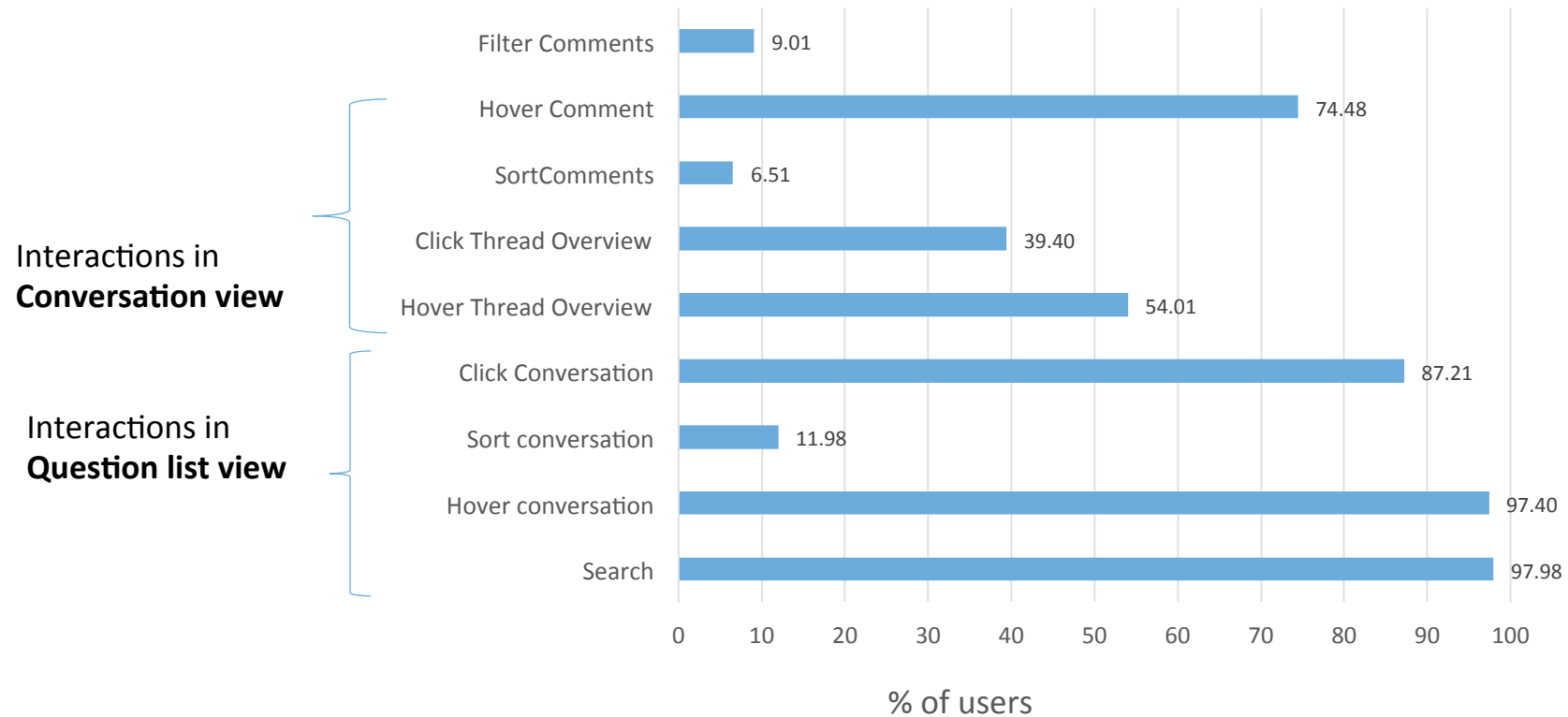
I found this tool to be useful



Would you prefer this tool over the regular one? *

Yes: 75%, No: 6.25, Can't tell: 18.75%

User Evaluation of CQAVis: Interaction Statistics



Time spent: 155 sec (median), 2483 sec (average)

Lessons Learned

Design

- Less is more
- Enhance learnability
- Introduce familiar visualizations

Evaluation

- Challenges in collecting feedback from users

Conclusions

- We successfully integrate **NLP** and **InfoVis** for CQA
 - **NLP**: retrieve and rank comments given a new questions
 - **InfoVis** : helps the user in rapidly navigating the comments
- Used by a **population** with possibly **low visualization literacy**
- **Lessons** learned from the study
- Future work:
 - Further improve the **comment classifier**
 - Apply CQAVis in other forum conversations



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Thank you!

Check out the live demo:

iyas.qcri.org

Supplementary slides

User requirements analysis

- Analyzing Existing HCI literature

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 - *Many questions are subjective in nature*
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• We need a comment **classification** technique to find good answers

- Interviewing **Qatar Living admins and users**

- Many naive users
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- Screen space constraints

• Interface should be **simple** and **intuitive**.

• Interface should support users in identifying **good answers** quickly

User Evaluation of CQAVis

- Some qualitative feedback?
- About limitations?

Literature Review

- Conversation visualization in general
 - Convis and others
- Specific for CQA domain

Future Work

- Further improve the **comment classifier**
- Apply CQAVis in other forum conversations