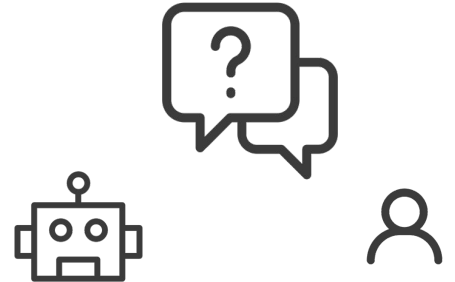




# Conversational Search: Mixed-Initiative Interactions

EN. 601.792.01

Ziang Xiao  
Department of Computer Science  
Spring 2024



- Reading Responses for Lead Discussant
- Reading Schedule
- Course Feedback Form
- Class time for brainstorm ?

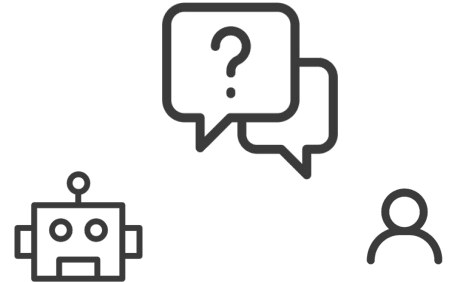
## **Announcements**



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# Different Interactions in Conversational Interactions

## User Initiative

User is **active**, System is **passive**

- User drives the conversation by asking questions

## Mixed Initiative

System is **active**, user is **active**

- Both system and user can lead the conversation by asking questions
- Both system and user also chit-chat

## System Initiative

System is **active**, User **engages**

- System asks questions and user responds to the questions
- Both system and the user also chit-chat. User may not directly answer questions.

System is **active**, User is **passive**

- System leads the conversation by asking questions to the user
- User can only respond to the questions directly.

A way of searching that uses **complete sentences** and **other natural-sounding phrases** and accommodates **follow up questions**

The screenshot shows a Microsoft Bing search interface. At the top, there are navigation links for 'Microsoft Bing', 'SEARCH', and 'CHAT'. The user's profile 'zxiao25@jh...' is visible in the top right corner, along with a 'Protected' status indicator. The search results are displayed in a list format. The first result is for 'Tripadvisor (1)', showing a photo of food, a rating of 4.5 stars, and the address '3201 Saint Paul Street, Charles Village, Baltimore'. The second result is for 'Azafran Catering', showing a photo of a dining room, the address '3700 San Martin Dr, Baltimore', and the phone number '(410) 338-4757'. Below the search results, there is a section for 'You' with the question 'Which of those are in homewood?'. The 'Copilot' section provides a detailed answer, listing seven dining options on the Homewood campus at Johns Hopkins University. The options are: 1. Hopkins Café, 2. Nolan's on 33rd, 3. Charles Street Market, 4. The Bun Shop, 5. Levering Kitchens and Levering Café, 6. Starbucks, and 7. Café Q. A note at the bottom of the Copilot response states that the 'best' cafeteria can vary depending on personal preferences for food and ambiance. At the bottom of the page, there is a chat input field with the placeholder text 'Ask me anything...' and a character count of '0/4000'.

Microsoft Bing SEARCH CHAT zxiao25@jh... Protected

Tripadvisor (1) Open · Closes 7:30 PM 3201 Saint Paul Street, Charles Village, Baltimore Delivery · Takeout WEBSITE DIRECTIONS

Azafran Catering 3700 San Martin Dr, Baltimore · (410) 338-4757 Open · Closes 2 PM DIRECTIONS

See more results

You Which of those are in homewood?

Copilot Your personal and company data are protected in this chat Here are some of the dining options located on the Homewood campus at Johns Hopkins University:

1. **Hopkins Café** (1): This residential location introduces new station concepts including Passport (international cuisine), Hot off the Press (made-to-order paninis), and more!
2. **Nolan's on 33rd** (1): Another residential location with a variety of dining options.
3. **Charles Street Market** (1): This retail location introduces new concepts including freshly-rolled sushi by Bento Sushi and Village Deli.
4. **The Bun Shop** (1): A part of the Hopkins Dining program.
5. **Levering Kitchens and Levering Café** (1): These are also part of the Hopkins Dining program.
6. **Starbucks** (2) (3): There are multiple Starbucks locations on the Homewood campus. They offer a variety of coffee, teas, pastries, and other treats.
7. **Café Q** (4): Located on the quad level of the Milton Eisenhower Library, it serves gourmet coffee and teas, and daily packaged sandwiches, salads, and sushi.

Please note that the "best" cafeteria can vary depending on personal preferences for food and ambiance. It's recommended to try out different places and see which one you prefer the most. Enjoy your meals!

Your personal and company data are protected in this chat

Ask me anything... 0/4000

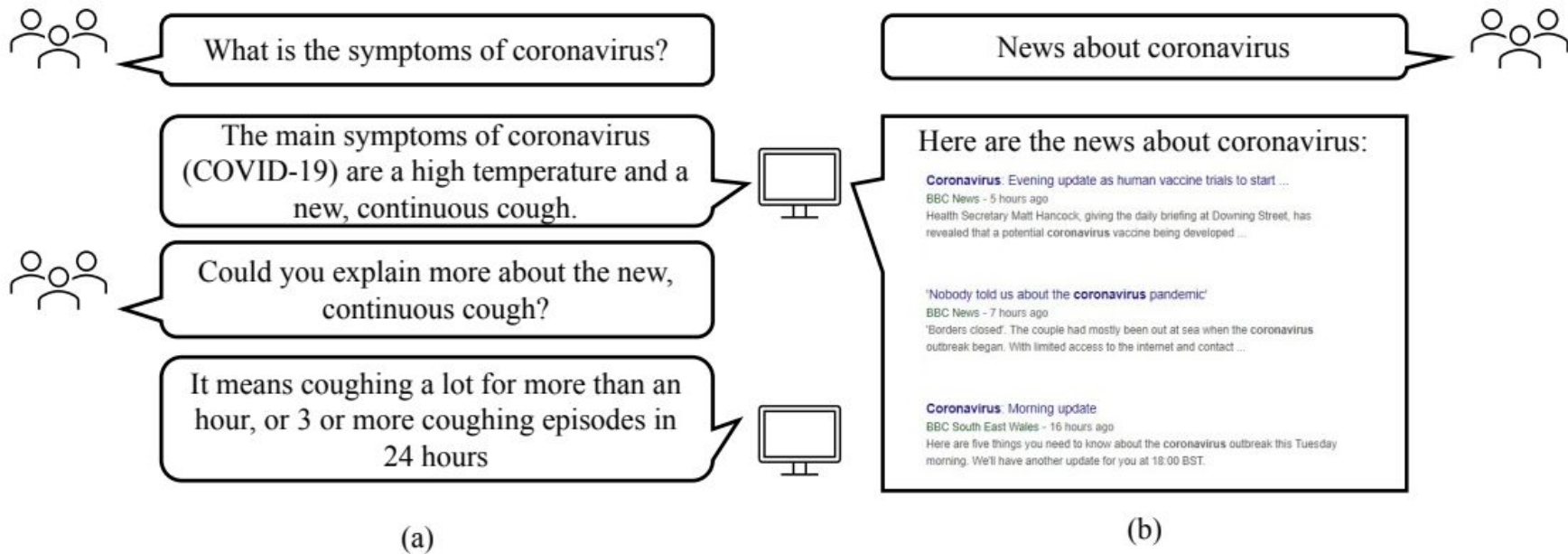


Fig. 1. Two popular presentation strategies for conversational search: (a) Single Response in Single Turn (SRST); and (b) Multiple Responses in Single Turn (MRST).

	<b>Conventional Search</b>	<b>Conversational Search</b>
<b><i>Input</i></b>	Keyword	Natural Phrase
<b><i>Follow up questions</i></b>	Limited	Natural
<b><i>Output</i></b>	Ranked List	Summarized Document
<b><i>User Exploration</i></b>	Natural	Limited
<b><i>Fidelity</i></b>	Non-factual article	Non-factual generation

Which one is better?



It depends on the goal and context.

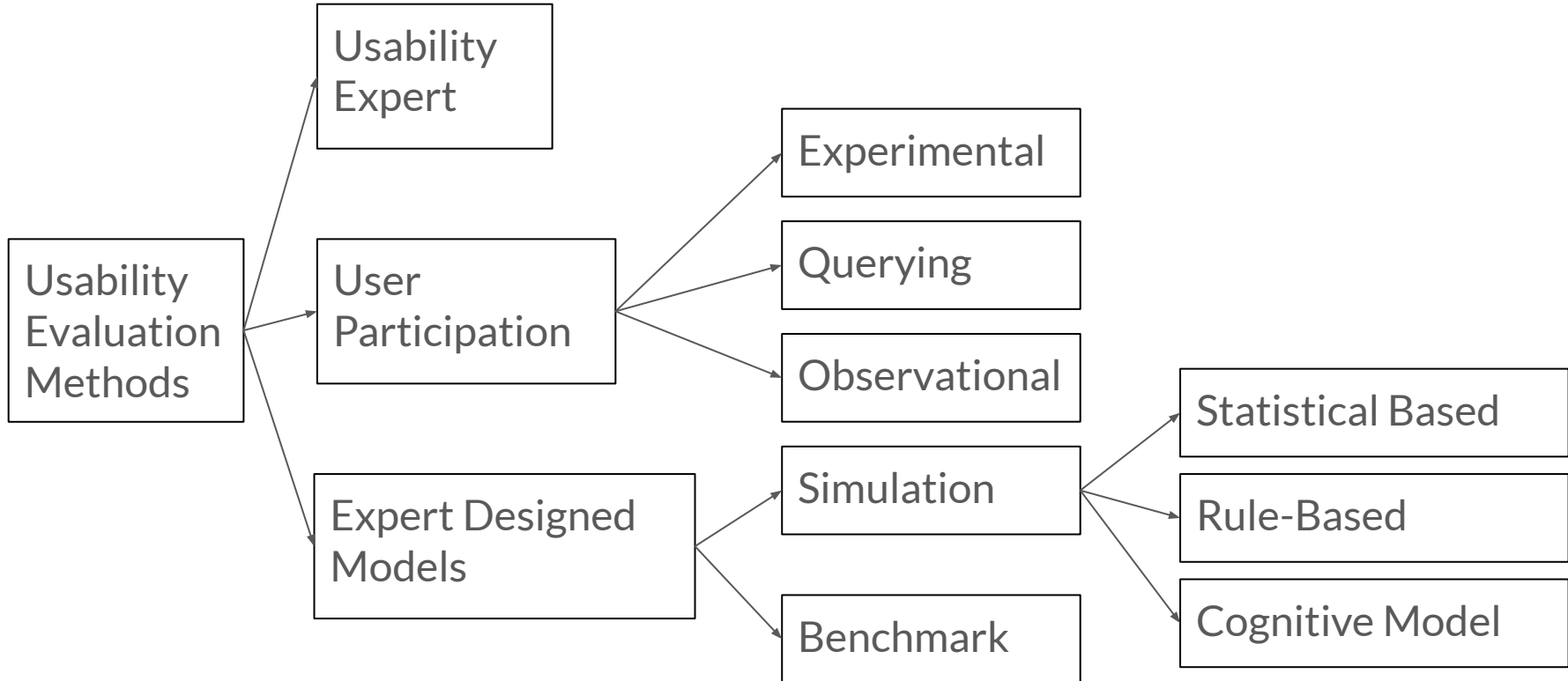
Evaluation of  
Conversational Search

```
graph TD; A[Evaluation of Conversational Search] --> B[Search Quality]; A --> C[Conversation Quality];
```

Search  
Quality

Conversation  
Quality

# Evaluation of Conversational Search





See you next Monday!

Before you go,

1. Find a team
2. Sign up for presentations