Question Answering at Bing

Yan Ke
Principal Software Engineering Manager
Entity Understanding Group
Search in the 1990’s – 10 blue links

The Weather Channel - Official Site
www.weather.com - Official site
The Weather Channel and weather.com provide a national and local weather forecast for cities, as well as weather radar, report and hurricane coverage.

AccuWeather - Official Site
www.accuweather.com - Official site
Weather forecast, local to international. World class weather radar plus your up to the minute weather report and current conditions

Weather Underground - Official Site
www.wunderground.com - Official site
Weather Underground provides local & long range Weather Forecast, weather reports, maps & tropical weather conditions for locations worldwide.
Search in the 2000’s – Instant answers

http://www.microsoft.com/presspass/newsroom/factsheet/LiveSearchFS.mspx
Search today – Natural language understanding
Proactive – Search via context
Proactive – Search via context

Here are some lunch places you might enjoy.

- **Ristorante Paradiso**
  - 4.42 mi | ★★★★★ Yelp (124) | $$$$ 

- **Ivar’s**
  - 5.56 mi | ★★★★★ Yelp (60) | $$$$ 

- **Claim Jumper**
  - 2.40 mi | ★★★★★ Yelp (220) | $$$$ 

Data from: Yelp

See more restaurants
Reduce time to task completion

• 10 blue links
  • Relevant web pages
  • Page load times

• Instant answers from
  • Feed providers
  • Knowledge graph
  • Web free text

• Proactive
  • Answer before you even asked
Question answering through knowledge graphs
Integrated entity experiences

Combine data from many sources for an entity to build a rich user experience.
U2 / Top songs / With or Without You

Videos of u2 with or without you

Lyrics
See the stone set in your eyes
See the thorn twist in your side
I wait for you
Sleight of hand and twist of fate
On a bed of nails she makes me wait
And I wait, without you
With or without you
With or without you
Through the storm we reach the shore
You give it all but I want more
And I'm waiting for you
With or Without You

"With or Without You" is a song by the Irish rock band U2. It is the third track from their fifth studio album, The Joshua Tree, and was released as the album's lead single on 21 March 1987. The song was the group's most successful single at that time.

Album: The Joshua Tree
Artist: U2
Duration: 4:49
Genre: Rock, Mainstream Rock

Listen or buy
- Xbox Music
- iTunes
- Amazon MP3

Also appears on
- U218 Singles
- The Best Of: Please
- The Best Of: 1980 - 1990

Data from: Xbox Music · LyricFind · Freebase
Feedback
High level architecture

- Web documents
- Licensed data
- Open data

Document understanding and data extraction → Satori knowledge graph → Offline knowledge inference → Online knowledge serve → UX / Rendering

Query understanding ← Question
Answer ←
Advanced query understanding demo
Sleepless in Seattle (1993)

Joe Versus the Volcano (1990)

You've Got Mail (1998)
Joe Versus the Volcano (1990)
**IMDb: Sleepless in Seattle (1993)**

www.imdb.com/title/tt0108160

Rating: 6.8/10 · 111,648 ratings · Comedy/Drama/Romance · PG · 105 min

With Tom Hanks, Meg Ryan, ... Director: Nora Ephron. Writers: Jeff Arch (story), ... Title: Sleepless in Seattle (1993) ...
“Answer what I wanted to know, not what I asked.”
Highest Buildings

Burj Khalifa
2,717 feet

Tokyo Skytree
2,080 feet

Shanghai Tower
2,073 feet

102 Incheon Tower
1,959 feet

Canton Tower
1,969 feet

Goldin Finance
1,959 feet

Ping An Finance Centre
1,821 feet
Closed world assumption

first, tallest, longest, largest, smallest, deepest, fastest, ...
Q&A from web text
Web text
(10 blue links)
Web text (10 blue links) 

Knowledge graph 

Feeds (weather, stock, etc.)
Web text
(10 blue links)

Knowledge graph

Feeds
(weather, stock, etc.)
Neil Alden Armstrong (born August 5, 1930) is an American aviator and a former astronaut, test pilot, aerospace engineer, university professor, and United States Naval Aviator. He was the first person to set foot on the Moon.

Neil Armstrong: First Man on the Moon P1 - YouTube
www.youtube.com/watch
How to Clean Your Dishwasher

- Dip a small brush, say, an old toothbrush.
- A soft abrasive cleanser such as Bon Ami may be needed to remove dried and baked on grime.
- Dip a cellulose sponge in the hot soapy water and wipe off the gunk you loosened with the brush and cleanser on the door.
- Using a clean wet sponge or cleaning rag, wipe down the the gasket and the door.

See more

How to Clean a Dishwasher | Kitchen Appliances and ... howtocleanstuff.net/how-to-clean-dishwashers
Apple Watch introductory price

Watch Sport
38 mm: US$349
42 mm: US$399

Watch
38 mm: US$549–US$1,049
42 mm: US$599–US$1,099

Watch Edition
38 mm & 42 mm: US$10,000–US$17,000

Apple Watch - Wikipedia, the free encyclopedia
en.wikipedia.org/wiki/Apple_Watch
Malware, short for malicious software, is any software used to disrupt computer operation, gather sensitive information, or gain access to private computer systems. Malware is defined by its malicious intent, acting against the requirements of the computer user, and does not include software that causes unintentional harm due to some deficiency.

Malware - Wikipedia, the free encyclopedia
en.wikipedia.org/wiki/Malware
High user expectations => High precision requirements

Other examples at Search Engline Land: When Google Gets It Wrong: Direct Answers With Debatable, Incorrect & Weird Content (June 17, 2015)
High user expectations => High precision requirements

How to tell fact from:
- rumors / gossip
- predictions / speculation
- opinion
- myths / urban legends
- controversy
- bad science

Other examples at Search Engline Land: When Google Gets It Wrong: Direct Answers With Debatable, Incorrect & Weird Content (June 17, 2015)
Action Answers
I, Robot

By Isaac Asimov

I, Robot is a collection of nine science fiction short stories by Isaac Asimov. The stories originally appeared in the American magazines Super Science Stories and Astounding Science Fiction between 1940 and 1941.

Wikipedia

Author: Isaac Asimov
First published: Dec 02, 1950
Series: Robot series
Followed by: The Complete Robot
Characters: Susan Calvin · Powell and Donovan · Lawrence Robertson · Dr. Alfred Lanning · Peter Bogert
In the late 1940s and early 1950s Isaac Asimov found a home on the pages of the science-fiction magazines Astounding and Super-Science Stories. World War II had just ended and the world was obsessed with air combat and the role of technology in society. Asimov's stories
Watch Django Unchained

Netflix

Amazon

Xbox Video

Watch trailer on IMDb
Lyrics

Guess it's true, I'm not good at a one night stand
But I still need love 'cause I'm just a man
These nights never seem to go to plan
I don't want you to leave, will you hold my hand?

Oh, won't you stay with me?
'Cause you're all I need
This ain't love it's clear to see
But darling, stay with me

Why am I so emotional?
No it's not a good look, gain some self control
And deep down I know this never works
Conclusions

• Users **love** instant answers
• Users **hate** wrong answers
• **Speed** matters – optimize for time to task completion
• **Entities** allows us to connect knowledge and build rich experiences
• Working to extract answers directly from web content, correctly.