



# NEXT GENERATION TECHNIQUES FOR THE NEXT GENERATION

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## What do people search for?

### Now

- Texts about a topic of interest

### Next

- Exact answers on their topic
- Surface knowledge about certain event



## USER TRUST

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People trust to search engines and ready to give a machine a chance to find out the necessary information for them.

**=> Question Answering & Multi-document Text Summarization**



Who killed  
**Kennedy?**

...the assassination  
of **Kennedy** by  
**Oswald**...

The proof that **Lee  
Harvey Oswald**  
killed **Kennedy** is  
overwhelming.

...**Lee Harvey  
Oswald** was a  
principle player in  
the **Kennedy**  
**assassination** ...

?



**(MULTI-) DOCUMENT SUMMARIZATION**

**similar meaning – one cluster to choose the best for the summary**

The proof that Lee Harvey **Oswald killed Kennedy** is overwhelming.

There is no doubt that **Oswald killed Kennedy**.

**Oswald killed Kennedy** when he was 24.

The **assassination of Kennedy** by **Oswald** is overwhelming.  
**Oswald killed Kennedy.**





**RESEARCH QUESTION**

In both cases we want to find out if text **entails** some hypothesis.

*Text:* The assassination of Kennedy by Oswald is overwhelming.

**entails**

*Hypothesis:* Oswald killed Kennedy.



*Text:* **Walter R. Mears, a columnist for The Associated Press,** has reported on Washington and national politics for more than 25 years.

*Hypothesis:* **Walter R. Mears writes for The Associated Press.**



**EXAMPLES OF INFERENCE**

*Text:* In the Italian Alps, **four climbers died in an avalanche** in the Argentera valley on Sunday afternoon.

*Hypothesis:* **Humans died in an avalanche.**



**EXAMPLES OF INFERENCE**

*Text:* **Yasser Arafat** has lapsed into a coma in a French hospital, a senior Palestinian official said Thursday, a day after **the Palestinian leader** *was rushed to intensive care* *following a sharp deterioration in his health.*

*Hypothesis:* **Arafat** *was taken to intensive care* *after his condition worsened.*



**That's it!**

**FUNNY STORY RELATED TO ENTAILMENT**

Two English lords are in the train and one is gloomy and another one tries to start conversation:

(he takes a bottle of whiskey and offers some to his fellow traveller)

-- Would you like some?

-- No, thank you, I tried once, but did not like it.

(he takes a pack of cigars)

-- Would you like one?

-- No, thank you, I tried once, but did not like it.

-- Well... Do you have a family, may be?

-- Yes, a wife and two kids.

-- Are they twins?

