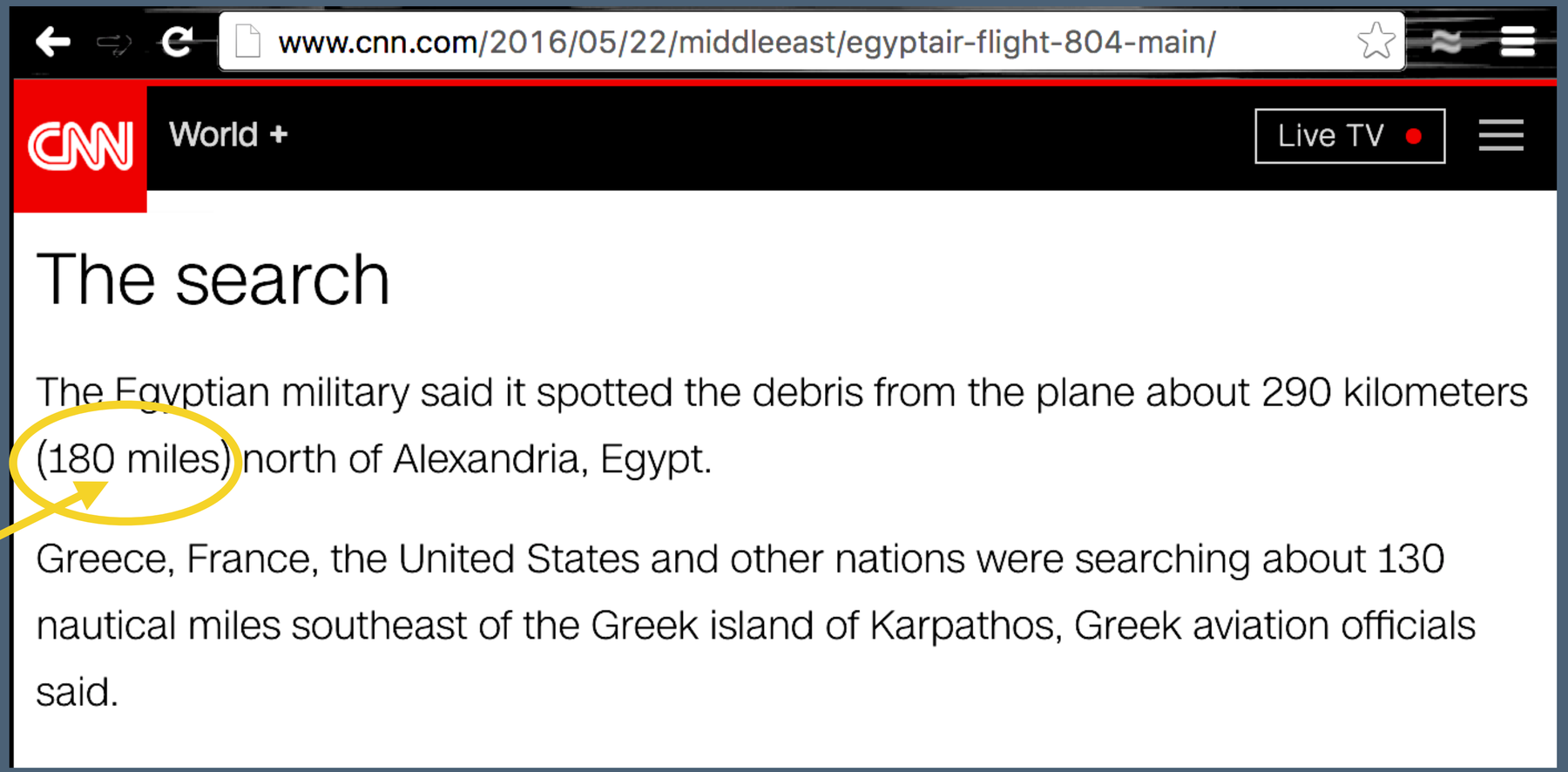
{Personalized, semantic-aware, inline}
Infoviz reconstruction

Tum Chaturparuek

Concepts

- **Problems:** Less familiar numbers are difficult to interpret



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Concepts

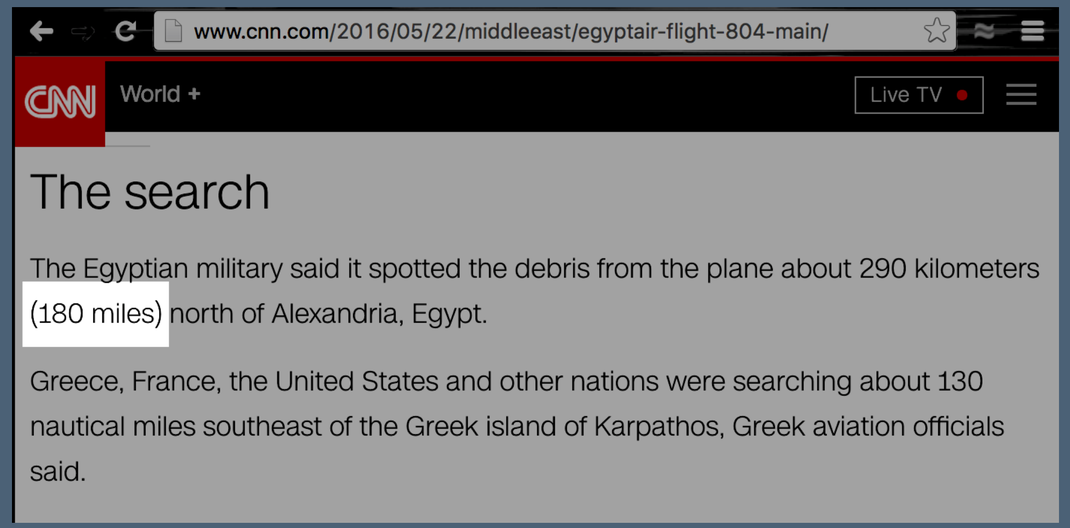
- **Problems:** Less familiar numbers are difficult to interpret

Solutions:

- Personalization
- Semantics
- Inline annotation in a browser readily available

Progress

- Started making a Chrome browser extension, tested on a CNN web



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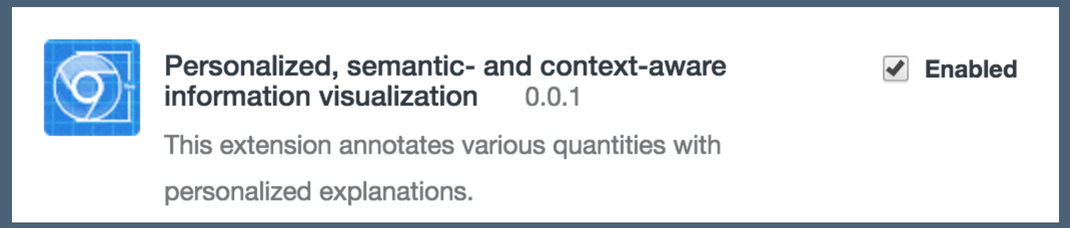
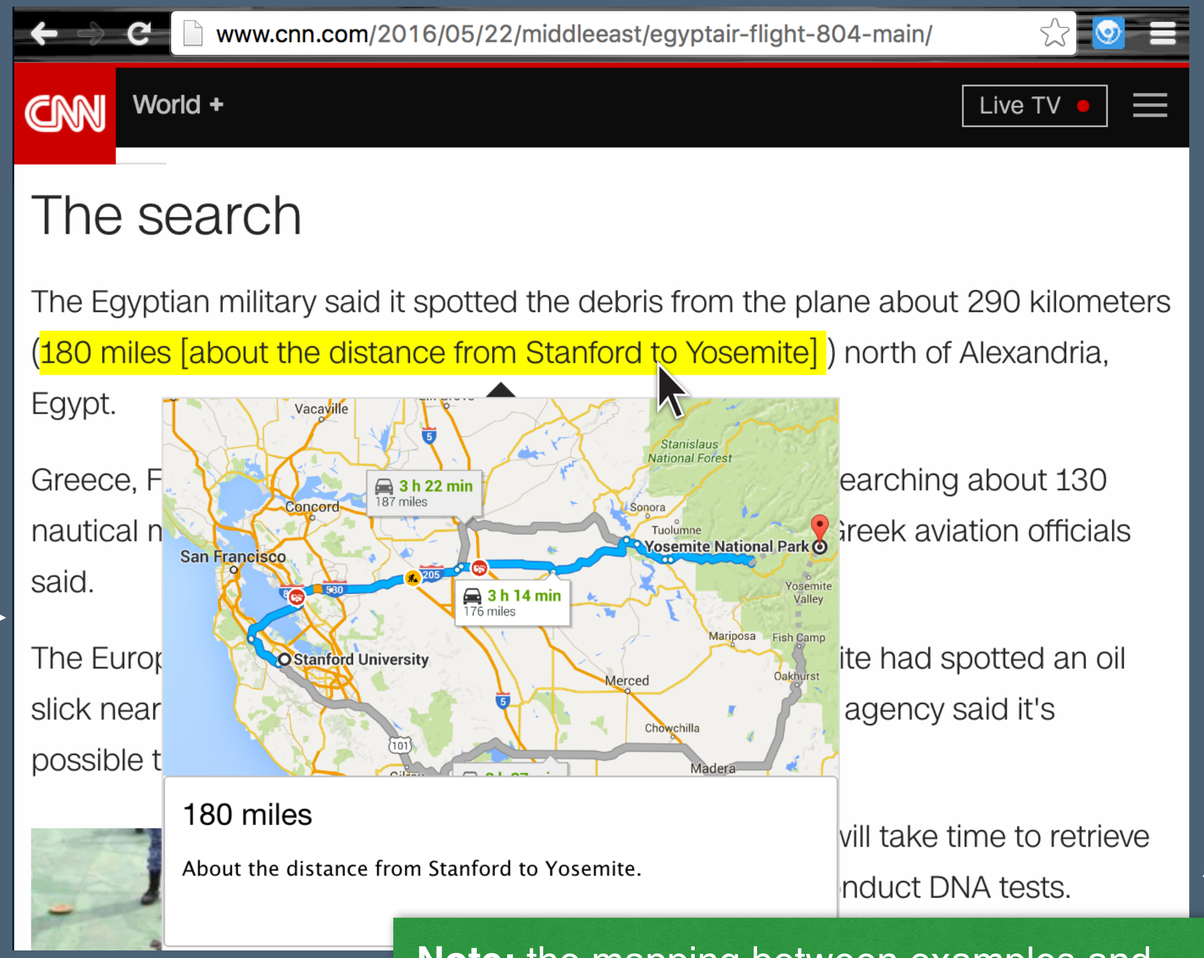




Note: the mapping between examples and explanations is currently hard-coded

Progress

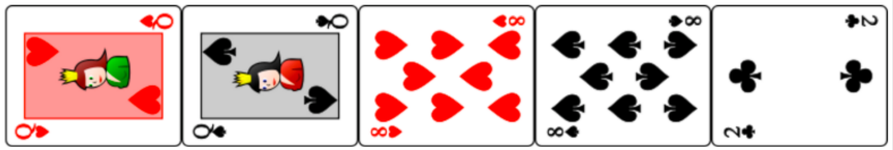
- Wrote a few test cases
- Started recruiting poker experts to do a study

file:///Users/sorathan/Github/semantic_viz/tests/example.html

Personalized, semantic-aware visualization test cases

Test cases

1. The Egyptian military said it spotted the debris from the plane about 290 kilometers (180 miles [about the distance from Stanford to Yosemite]) north of Alexandria, Egypt.
2. There is a 23% chance [about the probability of getting a two pair in poker] of raining tomorrow.
3. Michael Jordan's



The probability of getting a two pair in poker

The pairs can have any two of the thirteen ranks, and each pair can have two of the four suits.
The final card can have any one of the eleven remaining ranks, and any suit. Thus, the total number of two-pairs is:

$$\binom{13}{2}\binom{4}{2}^2\binom{11}{1}\binom{4}{1} = 123,552$$ which is about 23% chance.

Personal data

- Location: Stanford, CA
- Profession: Poker player

Note: the mapping between examples and explanations is currently hard-coded

Progress

- Thought about how to leverage personal info
- Thought about how to put numbers in context

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Personalized, semantic-aware visualization test cases

Test cases

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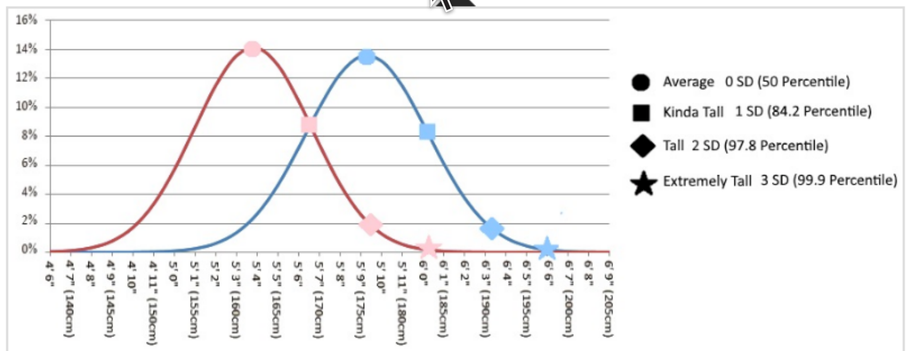
2. There is a 23% chance [about the probability of getting a two pair in poker] of raining tomorrow.
3. Michael Jordan's 198 cm [6′ 6″] .



6′ 6″

Extremely Tall.

99.846 Percentile (average 5′ 9.3″, standard deviation 2.94″)

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Literature Review

Previous work	Main contributions	How my project will differ
Dictionary of Numbers (Glen Chiacchieri;)	"315 million people" —> "315 million people [≈ the population of the United States]"	• Personalized • Context-aware • Less sparse

Literature Review

Previous work	Main contributions	How my project will differ
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Generating Personalized Spatial Analogies for Distances and Areas (Kim, Hullman, Agrawala; *CHI, 2016*)	• Automatically choosing well-known landmarks near user's location • Shown to improve helpfulness rating of info understanding	• Leveraging more personal info other than locations • More domains • Inline

Next: Milestones

- Current examples are hard-coded. Need to automate the process.
- Collect sharable personal info from Facebook
- **Implement features**
  - Personalize units based on location, spatial analogy, and probability
  - Time permitting,
    - contextualize numbers (need to do semantic parsing)
    - incorporate document context
- Perform user testing to get insight and test effectiveness

Questions for you

- Are there any poker experts here?
- Any other compelling examples that leverage personalization, context, and semantics?