Question Answering

Using Knowledge in QA





Relation Extraction

- Answers: Databases of Relations
 - born-in("Emma Goldman", "June 27 1869")
 - author-of("Cao Xue Qin", "Dream of the Red Chamber")
 - Draw from Wikipedia infoboxes, DBpedia, FreeBase, etc.
- Questions: Extracting Relations in Questions

Whose granddaughter starred in E.T.?

(granddaughter-of ?x ?y)

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(acted-in ?x "E.T.")
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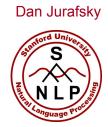


Temporal Reasoning

- Relation databases
 - (and obituaries, biographical dictionaries, etc.)
- IBM Watson

"In 1594 he took a job as a tax collector in Andalusia" Candidates:

- Thoreau is a bad answer (born in 1817)
- Cervantes is possible (was alive in 1594)



Geospatial knowledge (containment, directionality, borders)

- Beijing is a good answer for "Asian city"
- California is "southwest of Montana"
- geonames.org:





Context and Conversation in Virtual Assistants like Siri

Coreference helps resolve ambiguities

U: "Book a table at II Fornaio at 7:00 with my mom"

U: "Also send her an email reminder"

Clarification questions:

U: "Chicago pizza"

S: "Did you mean pizza restaurants in Chicago

or Chicago-style pizza?"

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