Hasso Plattner Institut

IT Systems Engineering | Universität Potsdam

Who Wants to be a Millionaire?

How to answer multi-choice questions?

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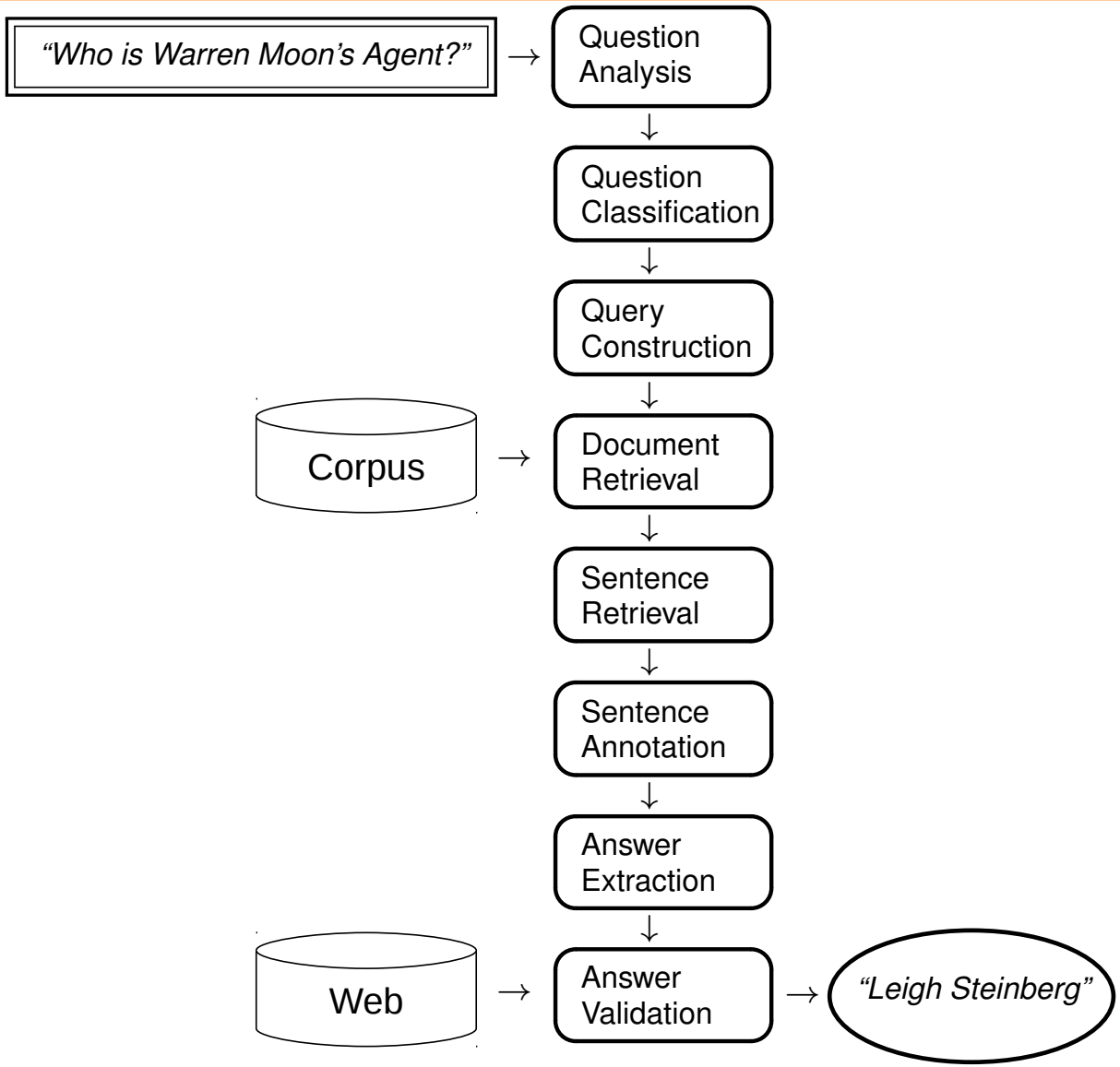
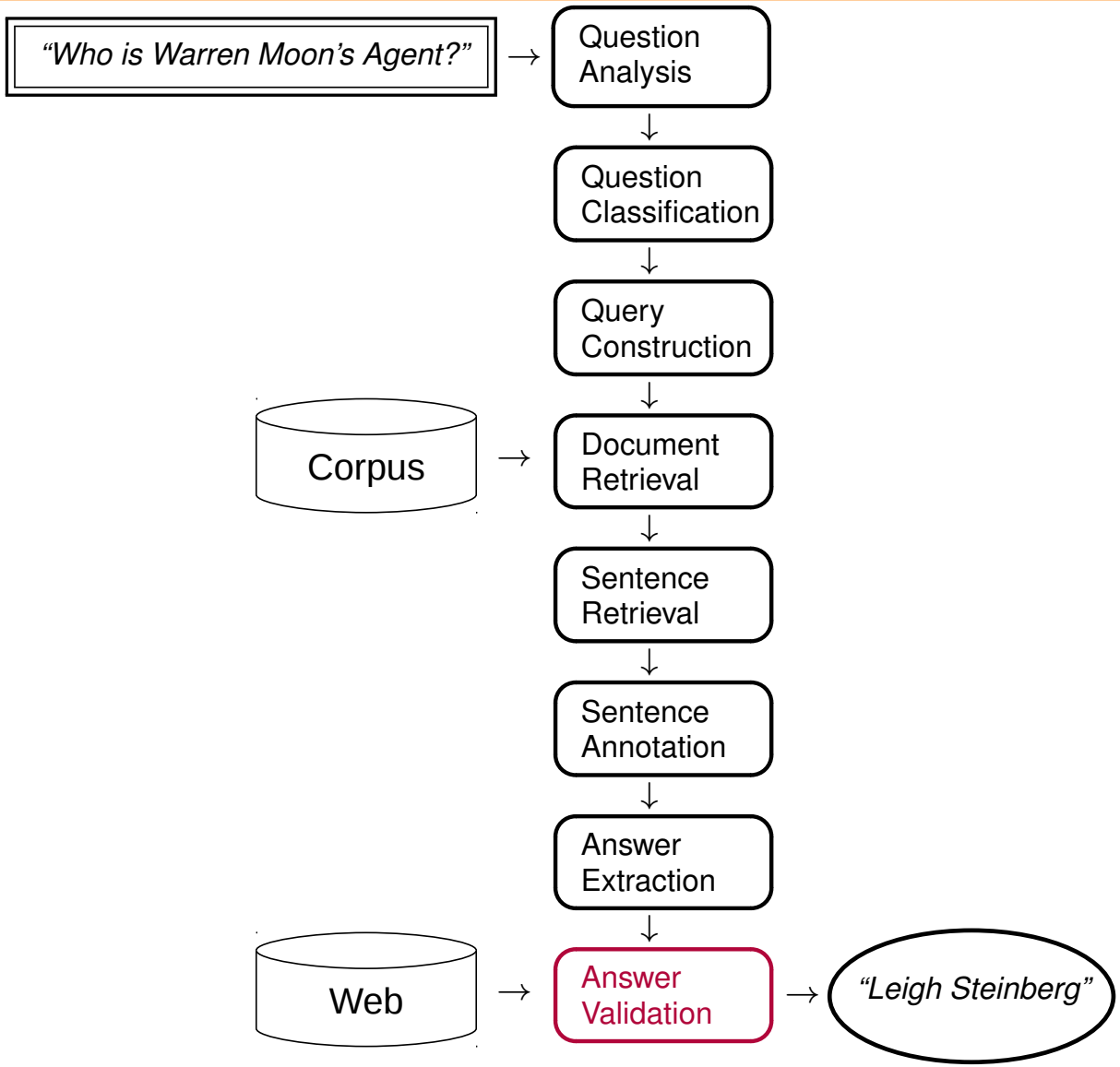
Introduction

Who Wants To Be A Millionaire?
Wer Wird Millionär?

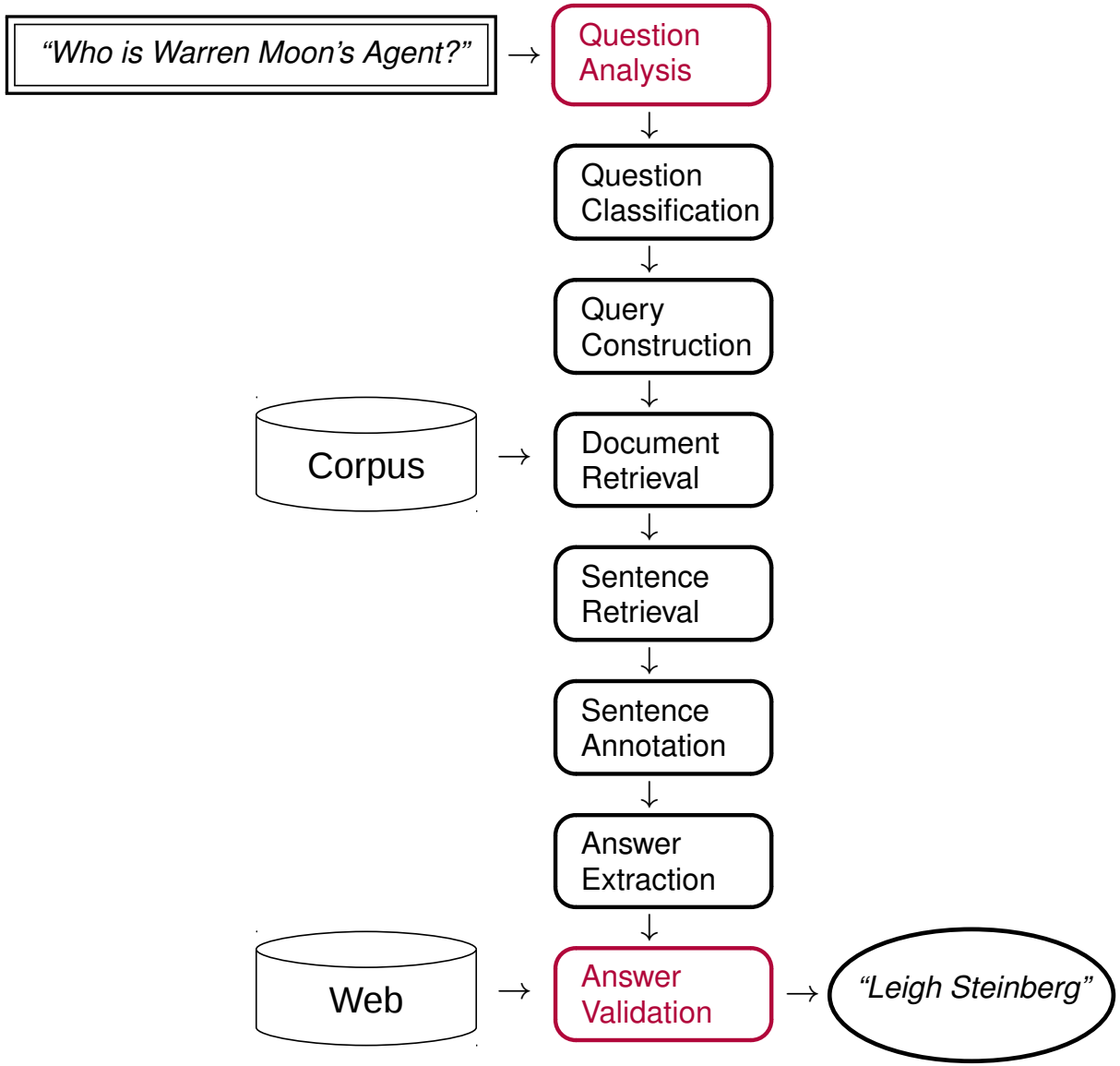
Architecture



Architecture



Architecture



Related Work

1 Billion Pages = 1 Million Dollars?
Mining the Web to Play "Who Wants to be a Millionaire?"

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Abstract

We exploit the redundancy and volume of information on the web to build a computerized player for the ABC TV game show "*Who Wants To Be A Millionaire?*". The player consists of a question-answering module and a decision-making module. The question-answering module utilizes question transformation techniques, natural language parsing, multiple information retrieval algorithms, and multiple search engines; results are combined in the spirit of ensemble learning

[5] are formal enough to be solvable in principle, though are far from trivial to master in practice due to exponential size search spaces. In chess, checkers, and backgammon, current machine players rival their best human competitors. Recently, attention has turned to less structured game environments, like crossword puzzles [16], video games [30], and soccer [29], where game states, actions, or both are not easily enumerable, making a pure search formulation unnatural or impractical.

"*Who Wants to be a Millionaire?*" is a trivia game where actions are enumerable, though competence depends on the ability to answer general-interest questions—often requir-

Uncertainty in Artificial Intelligence (UAI2003)

Related Work

Question Answering Module

- naive co-occurrence counting
- word proximity
- noun-phrase proximity
- combining the results

Decision Making Module

- constructing a decision tree to decide about the next step
  - answer the question
  - use a lifeline
  - walk away

Related Work

Question Answering Module

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Related Work

Engine	naive	word prox.	phrase prox.	combined
Google	55.6	55.0	68.9	70
AllTheWeb	56.1	51.7	58.3	66
MSN	44.4	48.9	47.2	58
AltaVista	46.7	55.6	56.1	68

The Project

- Language?
  - English
  - German
- Possible improvement?
- Additional features?