Lecture 21: Coreference Resolution

Question Answering
Q: Who signed the Serve America Act?
A: Barack Obama

Los Angeles Times
President Barack Obama received the Serve America Act after congress’ vote. He signed the bill last Thursday. The president said it would greatly increase service opportunities for the American people.

Machine Translation

امضاء کرد قانونا
emza-kard
ganoon-ra

person

He signed the bill

Discourse Structure

President Barack Obama received the Serve America Act after congress’ vote. He signed the bill last Thursday. The president said it would greatly increase service opportunities for the American people.
Entity Reference Resolution

Input:

President Barack Obama received the Serve America Act after congress close vote. He signed the bill last Thursday. The president said it would greatly increase service opportunities for the American people.

Entity Reference Resolution

Output:

President Barack Obama received the Serve America Act after congress close vote. He signed the bill last Thursday. The president said it would greatly increase service opportunities for the American people.

Entity Resolution Model

Barack Obama, the Serve America Act, congress

He, the bill

The president, it, American People

(Haghhighi & Klein, ACL '07)

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Barack Obama, the Serve America Act, congress

He, the bill

The president, it, American People

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The Weir Group, whose headquarters is in the U.S, is a large specialized corporation. This power plant, which will be situated in Jiangsu, has a large generation capacity.
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**Evaluation**

Cluster Similarity: MUC F1

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*Now system mentions! These are "real numbers"

**Errors**

**Input**

America Online announced on Monday that the company plans to update its instant messaging service.

**Correct**

America Online the company its instant messaging service

**Guess**

America Online the company its instant messaging service

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**Adding Semantic Knowledge**

America Online → company

America Online, LLC (commonly known as AOL) is an American global internet services and media company operated by Time Warner. It is headquartered at 770 Broadway in Midtown Manhattan, New York City. Founded in 1993 as Quantum Computer Services, it has franchised its services to companies in several nations around the world or set up international versions of its services. [1]

**Adding Semantic Knowledge**

America Online, LLC (commonly known as AOL) is an American Global Internet services and media company

George W. Bush, the 43rd president, is already the subject of more than 100 books

trade union: an organization whose members belong ...

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**Richer Semantic Modeling**

The Federal Reserve announced that the dollar dropped this week. It fell ...

The Federal Reserve announced that the dollar dropped this week. It predicted ...
Prototype-Driven Learning

Unlabeled Data + Prototype List = Annotated Data

[Baghlighti & Klein, NAACL '06]

Evaluation

MUC F1 - Cluster Similarity

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