The NoRDF Project

Fabian Suchanek

Amazing! This talk is free
of the Corona virus!

(about the speaker, we don't know...)

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Works on: Knowledge Bases,
Reasoning, natural language processing

Past:
- Max Planck Institute for Informatics/Germany
- Microsoft Research/US
- INRIA Saclay/France

Automated Text Understanding

In February 1998, Andrew Wakefield published a paper in the medical journal The Lancet, which reported on twelve children with developmental disorders. The parents were said to have linked the start of behavioral symptoms to vaccination. The resulting controversy became the biggest science story of 2002. As a result, vaccination rates dropped sharply. In 2011, the BMJ detailed how Wakefield had faked some of the data.

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Can current methods answer?

Question	Answer
Did Wakefile publish a paper?	√
Who published a paper?	√
Were vaccination rates higher before the publication?	?
What caused the controversy?	?
Does vaccination cause autism?	X
Should people vaccinate their children?	X

What do we need?

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Beliefs   Events   Stories

Claims   Reasons   Falsifications

Our Project: Understanding Text
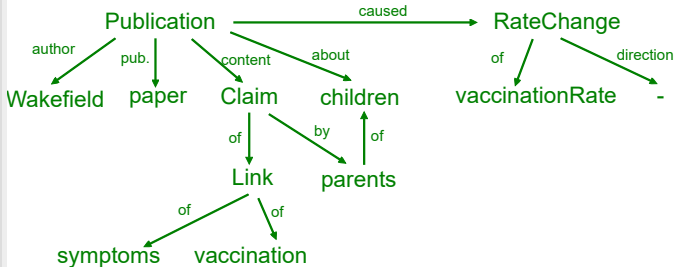
Goal: allow a computer to understand

Beliefs   Events   Stories

Claims   Reasons   Falsifications

More precisely:
1) extract complex knowledge from text
2) represent such knowledge and reason on it

Step 1: Information Extraction
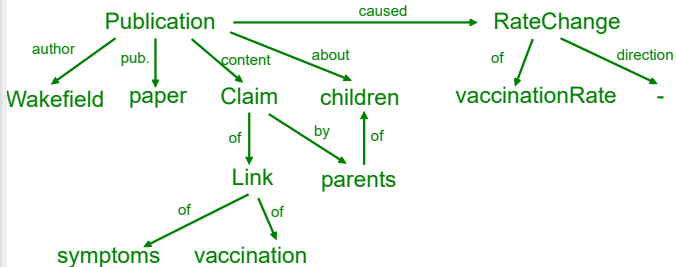
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Step 2: Reasoning

Applications

- Analysis of fake news / fact checking

- Analysis of the e-reputation of a company

- Flagging of potentially fraudulent activity.

- Modeling of processes, sequences of actions, etc.

- Smarter chatbots that go beyond single-shot questions.

- Legal text understanding (laws, regulations, contracts)

Understanding the arguments of the other side
is a prerequisite for refuting them.

Preliminary Achievements

"Reasoning with Transformer-based Models"
Automated Knowledge Base Construction (AKBC)

"The Vagueness of Vagueness in Noun Phrases"
Automated Knowledge Base Construction (AKBC)

"Non-named entities — the silent majority"
Extended Semantic Web Conference (ESWC)

"Machine Knowledge: Creation of Knowledge Bases"
Foundations and Trends in Databases

"The Need to Move Beyond Triples"
International Workshop on Narrative Extraction from Texts
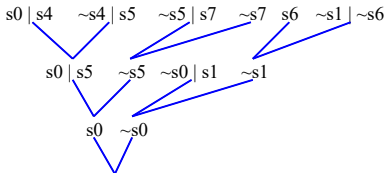
Preliminary Achievements: Demo

If Wakefield is right, then vaccination causes autism.
And if vaccine shots are responsible for development disorders
then parents shouldn't vaccinate their children.

But if Wakefield is wrong, then parents should allow the
vaccination of their children.
Large-scale studies show that vaccination does not entail ASD.

Hypothesis: Parents should vaccinate their kids.

s0 | s4   ~s4 | s5   ~s5 | s7   ~s7   s6   ~s1 | ~s6

    s0 | s5   ~s5   ~s0 | s1   ~s1   => YES !

       s0   ~s0

The NoRDF Project

The NoRDF Project aims to extract and model complex information from natural language text. It is supported by:

Your company name here?