Case Study: Deontological Ethics in NLP

Shrimai Prabhumoye*, Brendon Boldt*, Ruslan Salakhutdinov, Alan W Black

Carnegie Mellon University

Language Technologies Institute

Ethics

- Prior work on understanding and mitigating bias (Hovy & Prabhumoye, 2021; Blodgett et al, 2020; Shah et al, 2020; Sun et al, 2019; Zhao et al, 2019; Tatman, 2017; Bolukbasi et al, 2016)

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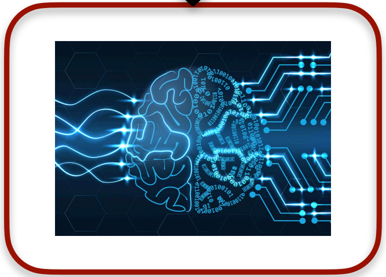
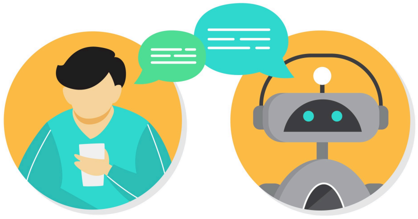


How can we apply it to NLP?

Ethics

- Deontological framework for NLP
  - Generalization principle
  - Respect for Autonomy
- Reasonable, clear ethical rules, “rule of law”



Question-Answering

Machine Translation

Detecting objectionable content

Dialogue Systems

Which tasks have important ethical implications?

What factors and methods are preferable in ethically solving this problem?

Generalization Principle

Generalization Principle

An action $\mathscr{A}$ *taken for reasons* $\mathscr{R}$ *is ethical if and only if a world where all people perform* $\mathscr{A}$ *for reasons* $\mathscr{R}$ *is conceivable.*

Generalization Principle

*An action $\mathscr{A}$ taken for reasons $\mathscr{R}$ is **un**ethical if and only if a world where all people perform $\mathscr{A}$ for reasons $\mathscr{R}$ logically contradicts $\mathscr{R}$*

Detecting objectionable content

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$\mathscr{A}$ deploying flagging systems

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$\mathscr{R}$ ↓ burden on humans ↓ # posts that need to be seen by human eyes

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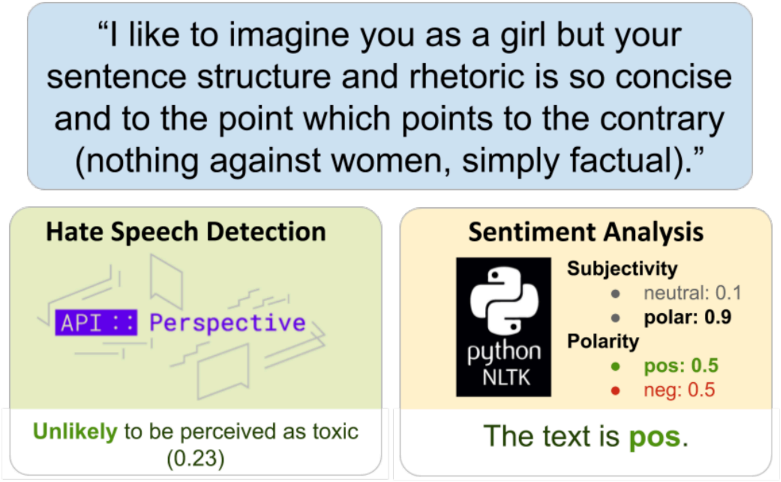

"I like to imagine you as a girl but your sentence structure and rhetoric is so concise and to the point which points to the contrary (nothing against women, simply factual)."

Hate Speech Detection

Unlikely to be perceived as toxic (0.23)

Sentiment Analysis

Subjectivity

- neutral: 0.1
- **polar: 0.9**

Polarity

- **pos: 0.5**
- neg: 0.5

The text is **pos**.

[Breitfeller et al, EMNLP 2019]

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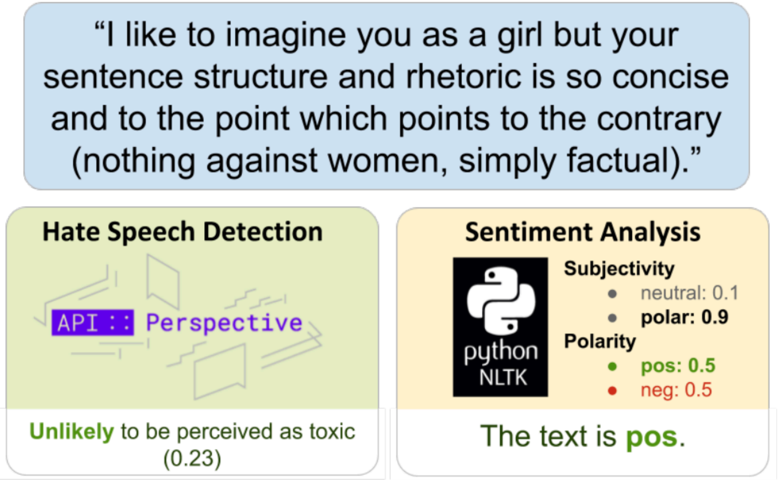

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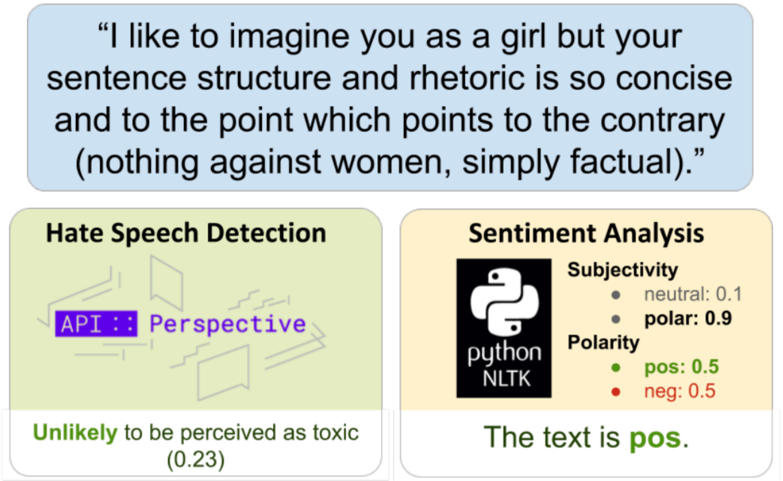

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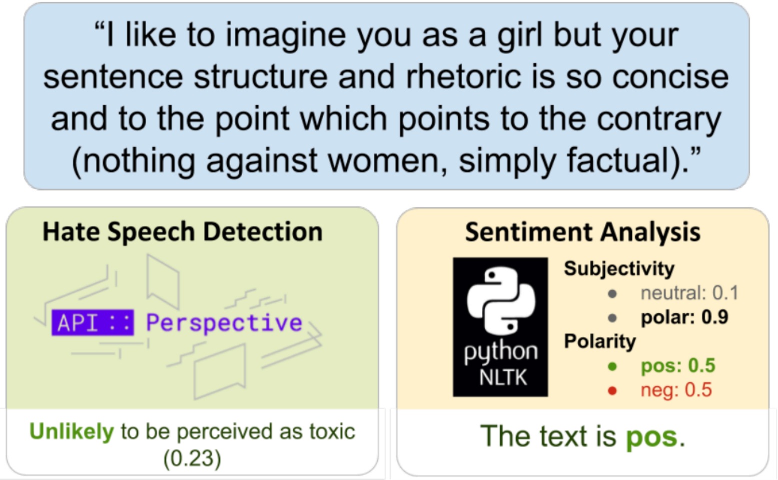

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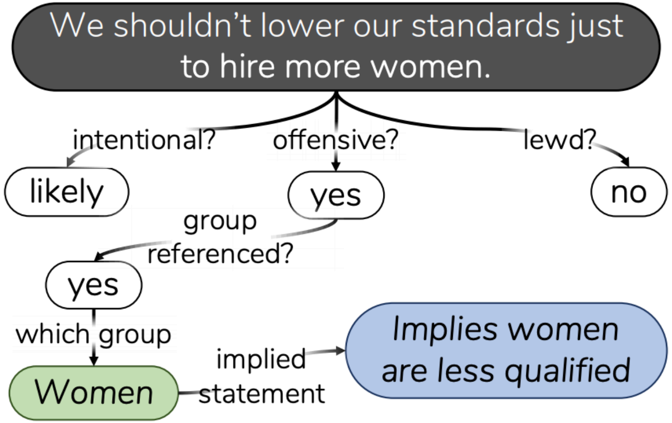


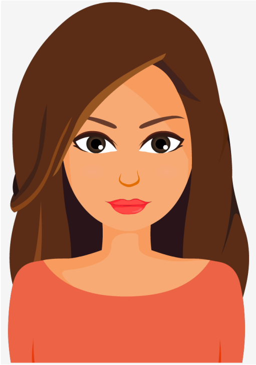
[Sap et al, ACL 2020]

- Underlying intent, offensiveness, and power differentials between different social groups.
- Generate consequences and implications
- Does not lead to an arms race between objection content generation and detection

Respect for Autonomy

- Addresses the right of a person to make decisions which directly pertain to themselves.
- ***Informed consent***

Zara



Sanaa

Respect for Autonomy

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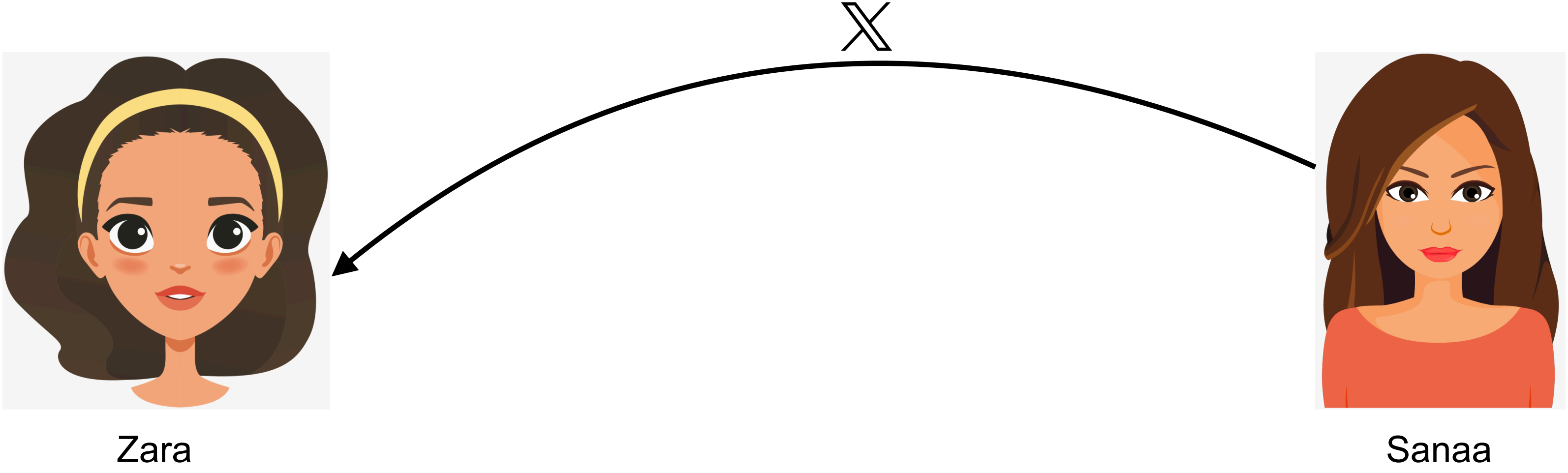

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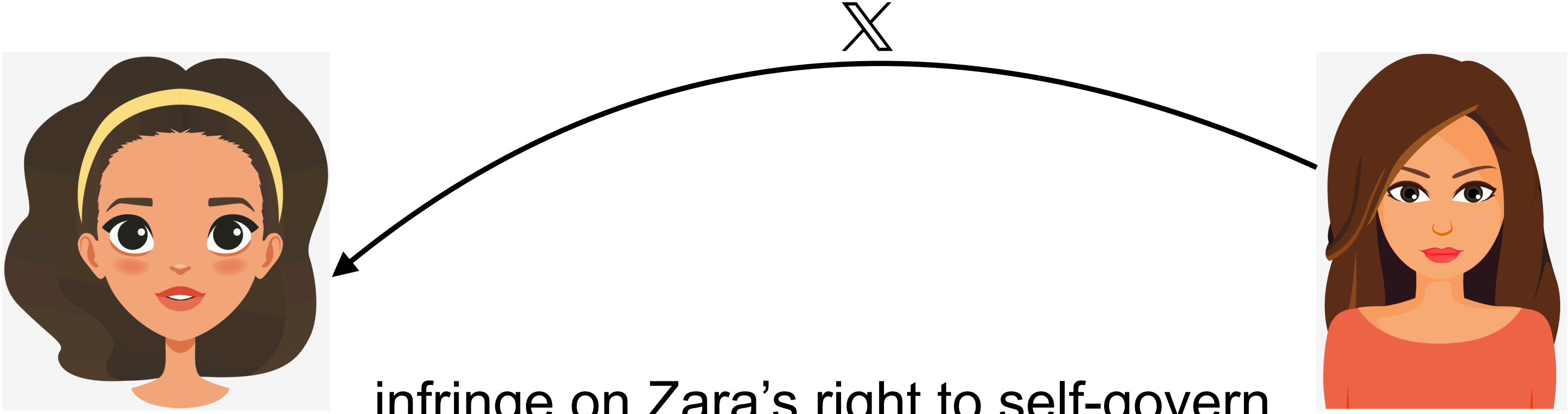

𝕏

infringe on Zara’s right to self-govern

Zara

Sanaa

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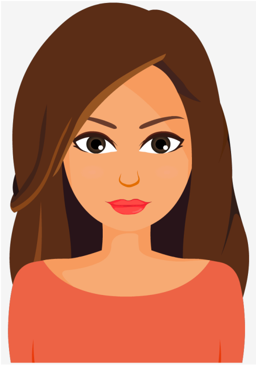

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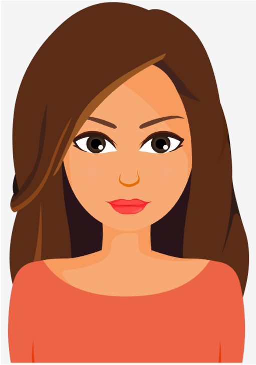
Zara must be sufficiently informed about $\mathbb{X}$



Sanaa

Respect for Autonomy

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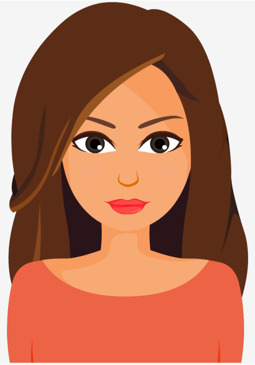
Zara

Zara must be sufficiently informed about $\mathbb{X}$

Zara *herself* makes the decision to allow Sanaa to do $\mathbb{X}$

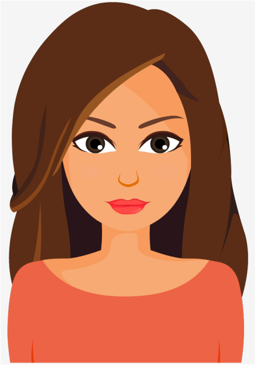


Sanaa

Translation

Translator

Zara



Sanaa

Translation

Zara consents to Sanaa serving as an *ad hoc* representative for what she would like to say.

Translator

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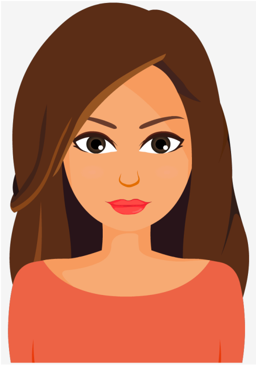

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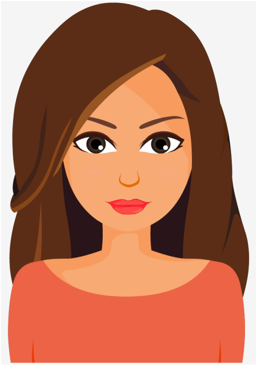
There might be a formal contract of how Sanaa is to act



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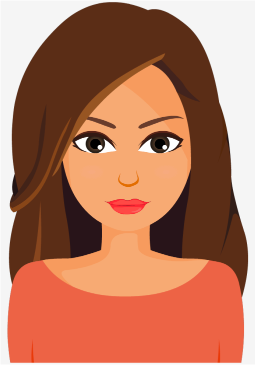
Zara relies on Sanaa's paralinguistic conduct



Sanaa

Machine Translation

Zara

Translator

Machine Translation

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MT system is speaking for Zara

Translator

Zara

Machine Translation

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Zara must be ***informed*** of ambiguities so that she can ***consent*** to the message which the system ultimately conveys.

Zara

Translator

Machine Translation

Machine Translation

MT system is speaking for Zara

Zara must be ***informed*** of ambiguities so that she can ***consent*** to the message which the system ultimately conveys.

Zara must also be ***informed*** of the failure cases in the MT system.

Zara

Translator

Machine Translation

Machine Translation

Ms. Hashimoto …

Zara

Translator

English to Japanese Machine Translation

-san? or
-sensei?…

Machine Translation

Zara must be notified that such an ambiguity needs to be resolved because there is a risk of offending the Japanese speaker.

Ms. Hashimoto …

Zara

Translator

English to Japanese Machine Translation

-san? or
-sensei?…

Machine Translation

My *aunt* is coming home tomorrow.

Zara

Translator

English to Hindi Machine Translation

Is it maternal or paternal aunt? They have different words in Hindi.

Aadil

Machine Translation

MT system can ask a follow up question to Zara.

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Machine Translation

Zara

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Translator

English to Hindi Machine Translation

I am unable to translate the sentence in its current form. Can you please rephrase it?

Aadil

NLP methods for Ethics

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Machine Translation: understand social context, control formality, politeness, author attributes, voice

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Detecting objectionable content: generate consequences and implications

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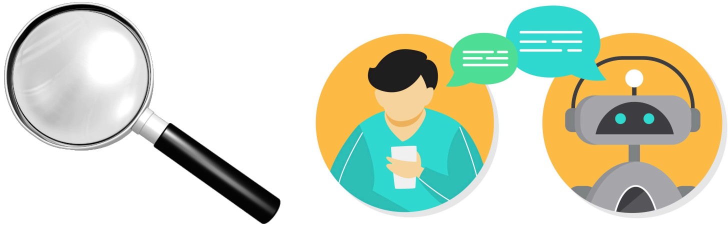

Question-Answering: transparency, dynamic graph generation for answers

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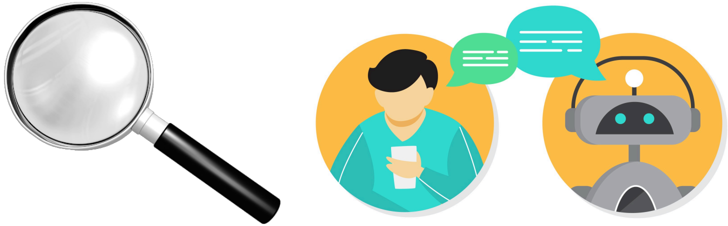
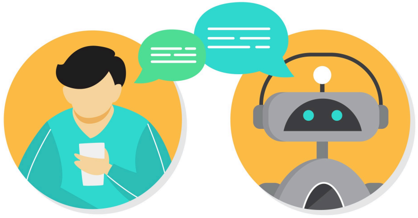


Question-Answering: transparency, dynamic graph generation for answers

Dialogue Systems: control topics, style, content, persona

Summary

- Deontological framework for NLP
  - Generalization principle
  - Respect for Autonomy
- Four case studies
- Discussion



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