

Fairslator

Demo proposal for TSD 2022

This demo will introduce Fairslator (www.fairslator.com), an experimental application for removing bias from machine translation. Translations produced by machines – especially when the source language is English – are often biased because of ambiguities in gender, number and forms of address. Fairslator resolves these by examining the output of machine translation, detecting the presence of any bias-triggering ambiguities, and asking the human user how they wish to resolve them: for example, whether gender-ambiguous English words such as *student* and *doctor* should be translated as male or female, or whether the English pronoun *you* should be translated as singular or plural, as formal or informal.

Fairslator works as an additional *processing layer* or *filter* between a machine translation service and the human user. Fairslator is able to work with any machine translator, currently it works with Google Translate, DeepL and Microsoft Translator. Fairslator scans the translator's output and, if it detects any bias-triggering ambiguities, intervenes by asking the human user how they wish to resolve the ambiguity.

The main type of bias handled by Fairslator is gender bias when translating occupation nouns from a language where they are gender-neutral (such as English) into a language where they need to be gender-specific (such as German and Czech). In some cases, the text which is available to the machine translator does not contain enough clues to disambiguate the gender of a referent. For example, the sentence *I am a good teacher* contains no clues as to whether the person referred to by *I* and *teacher* is male or female. In such a situation, machine translators typically make a biased decision, assuming a gender for the referent based on what they have seen more often during training. For most occupational nouns the bias tends to be in favour of male translations: German *Lehrer* (as opposed to female *Lehrerin*), Czech *učitel* (as opposed to female *učitelka*). Fairslator detects when this has happened and intervenes: it asks the human user whether the teacher is male or female and, based on the user's answer, re-inflects the translation to replace eg. *Lehrer* with *Lehrerin* if the user has selected a female reading.

In addition to occupation nouns, Fairslator also handles gender bias on predicatively positioned adjectives (eg. *I am happy*: Czech *jsem šťastný*, French *je suis heureux* if male, Czech *jsem šťastná*, French *je suis heureuse* if female) and on the past participles of verbs (*I went*: Czech *já jsem šel*, French *je suis allé* if male, Czech *já jsem šla*, French *je suis allée* if female).

Last but not least, Fairslator handles biases in other categories than gender, notably when translating English texts containing the pronoun *you*, the possessive determiner *your*, and imperative verbs. Translating such sentences into other languages is often biased towards interpreting the second-person referent as singular and addressed formally (German *Sie*, Czech *vy*, French *vous*), even when other interpretations are possible (as in *where are you?*). Fairslator detects when this has happened, asks the human user how they wish to interpret *you* (as one person or many, as formal or informal) and re-inflects the translation accordingly.

Fairslator currently works in three language pairs: English to German, English to Czech and English to Irish. Two more language pairs – English to French and English to Russian – are in preparation and may be ready in time for TSD.

Appendix: Screenshots of Fairslator

ENGLISH

I am a good teacher. Q

GERMAN CZECH IRISH

Ich bin eine gute Lehrerin.

Who is saying it?

- a man
- a woman
- unknown gender

Translated by [DeepL](#), disambiguated by Fairslator.

ENGLISH

I am a good teacher. Q

GERMAN CZECH IRISH

Ich bin ein guter Lehrer.

Who is saying it?

- a man
- a woman
- unknown gender

Translated by [DeepL](#), disambiguated by Fairslator.

ENGLISH

I am happy. Q

GERMAN CZECH IRISH

Jsem šťastná.

Who is saying it?

- a man
- a woman
- unknown gender

Translated by [Google Translate](#), disambiguated by Fairslator.

ENGLISH

I am happy. Q

GERMAN CZECH IRISH

Jsem šťastný.

Who is saying it?

- a man
- a woman
- unknown gender

Translated by [Google Translate](#), disambiguated by Fairslator.

ENGLISH

Where are you? Q

GERMAN CZECH IRISH

Wo bist du?

Who are you saying it to?

- one person
- addressed casually as "du"
- addressed politely as "Sie"
- more than one person

Translated by [Microsoft Translator](#), disambiguated by Fairslator.

ENGLISH

Where are you? Q

GERMAN CZECH IRISH

Wo sind Sie?

Who are you saying it to?

- one person
- addressed casually as "du"
- addressed politely as "Sie"
- more than one person

Translated by [Microsoft Translator](#), disambiguated by Fairslator.