

# **Investigating Failures of Automatic Translation in the Case of Unambiguous Gender**

**Lauren Ackerman. 2019.**

**Group: 1**

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# Introduction:

- NMT modules are transformer based which can be trained on vast data,
- Unable to make basic deduction to inflect noun with grammatical gender, even when it's ample contextual evidence
- Basic linguistic elements of a source sentence
- Occupation which do not bear grammatical gender marking in the source language to occupation bear
- Stereotypical noun which more likely refer to men or women (Janitor, Nurse)

## Analysis:

Source/Target		Label
Src: My sister is a carpenter <sub>4</sub> .	Tgt: Mi hermana es carpenteria(f) <sub>4</sub> .	Correct
Src: That nurse <sub>1</sub> is a funny man .	Tgt: Esa enfermera(f) <sub>1</sub> es un tipo gracioso .	
Src: The engineer <sub>1</sub> is her emotional mother .	Tgt: La ingeniería(?) <sub>1</sub> es su madre emocional .	Wrong
		Inconclusive

## Method:

Type	F	M
Trigger	she, her, hers, herself, sister, mother, aunt, grandmother, daughter, niece, wife, girlfriend	he, him, his, himself, brother, father, uncle, grandfather, son, niece, husband, boyfriend
Occupation	editor, accountant, auditor, attendant, assistant, designer, writer, baker, clerk, cashier, counselor, librarian, teacher, cleaner, house-keeper, nurse, receptionist, hair-dresser, secretary	engineer, physician, plumber, carpenter, laborer, driver, sheriff, mover, developer, farmer, guard, chief, janitor, lawyer, CEO, analyst, manager, supervisor, salesperson

**Accuracy is higher when trigger gender and occupation gender match, than when they don't. . .**



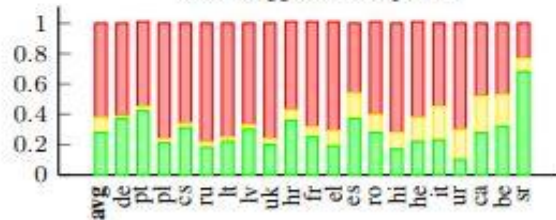
(a) M-trigger, M-occupation



(b) F-trigger, F-occupation

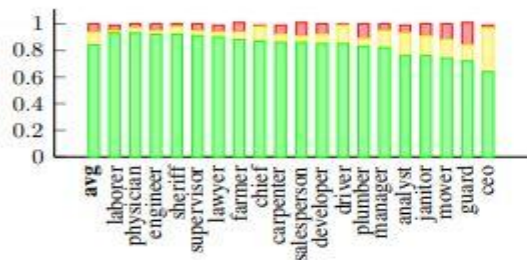


(c) M-trigger, F-occupation

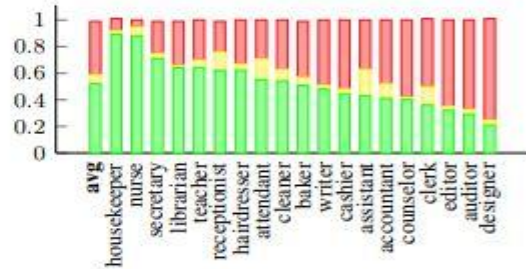


(d) F-trigger, M-occupation

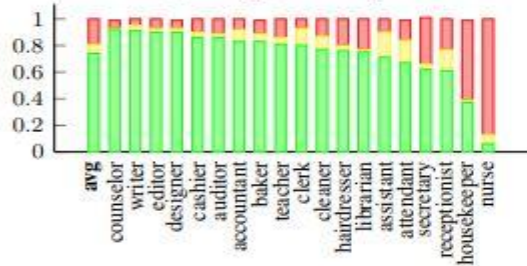
## Models achieve higher accuracy for masculine-indicative than feminine-indicative occupation



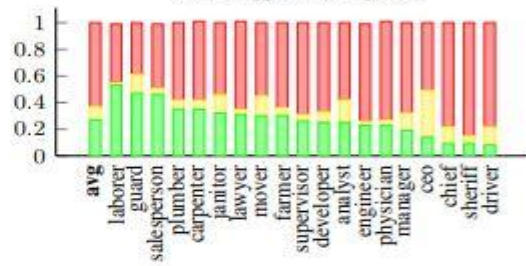
(a) M-trigger M-occupation



(b) F-trigger F-occupation



(c) M-trigger F-occupation



(d) F-trigger, M-occupation

## Conclusion:

- Present the dataset support translation from an English to 20 other languages
- Role of context in how MT translates gender morphology

## References:

- Lauren Ackerman. 2019. Syntactic and cognitive issues in investigating gendered coreference. *Glossa: a journal of general linguistics*, 4(1).