Why should people care gender bias in NLP
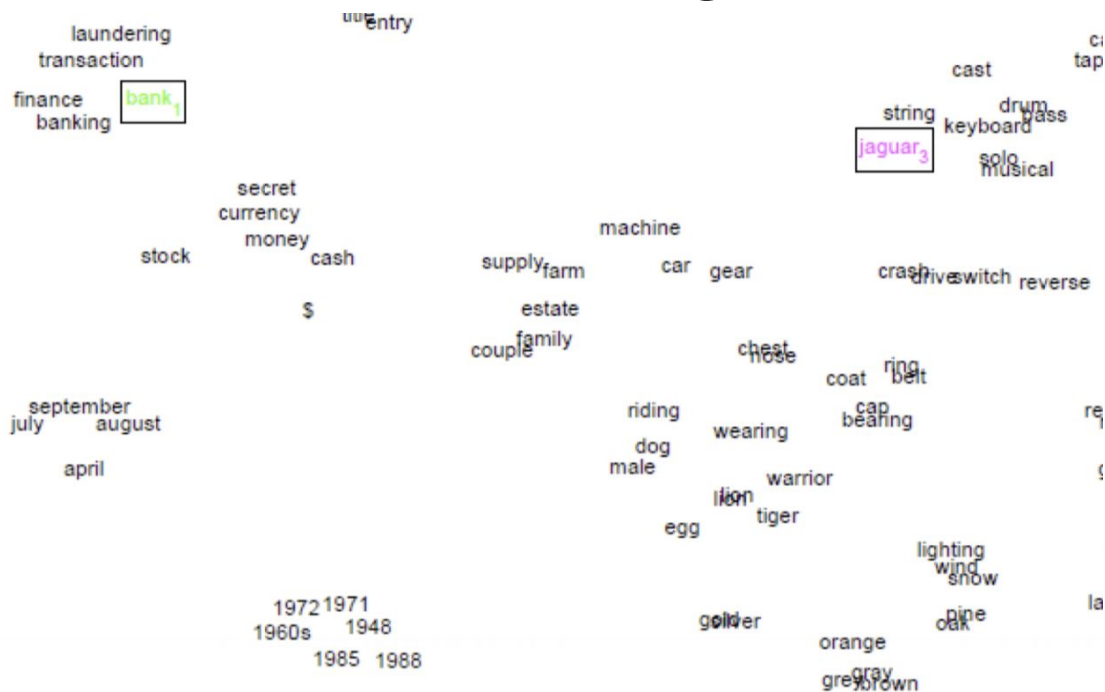
Giuseppe Serna

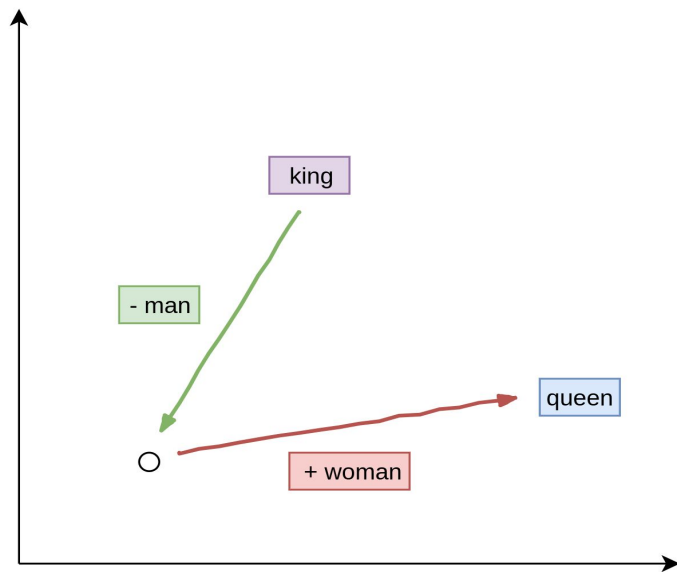# Natural Language Processing in AI

- Question Answering
- Machine Translation
- Speech Recognition
- Document Summarization
- Text Classification
- Language Modeling

What word embeddings are and what they look like

- words as vector

- capture semantic

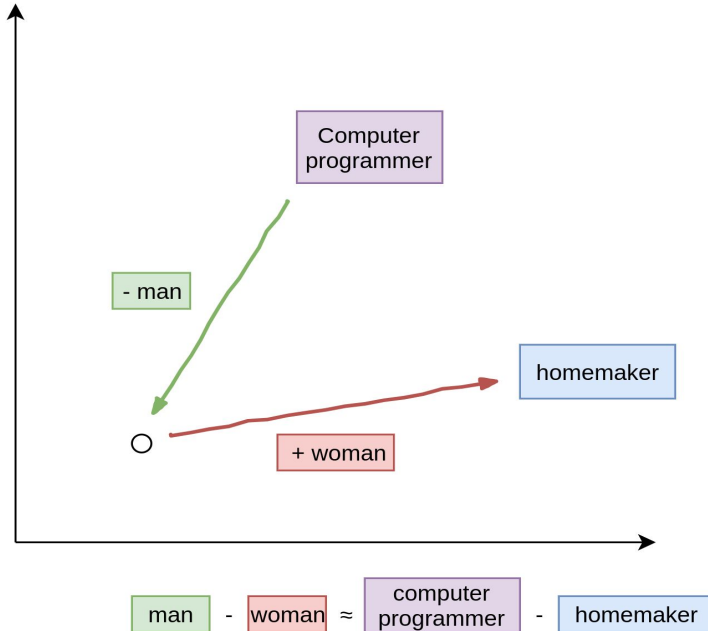- capture syntax

- similar words close

Words about professions in word embeddings

Word vect and algebra operations

- man is to king as woman is to queen

Word vect and gender bias

Computer programmer

- man

homemaker

+ woman

○

man - woman ≈ computer programmer - homemaker

- man is to computer programmer as woman is to homemaker

Man is to Computer Programmer as Woman is to Homemaker? Tolga Bolukbasi Kai-Wei Chang

Word vect are inputs for Deep Learning models
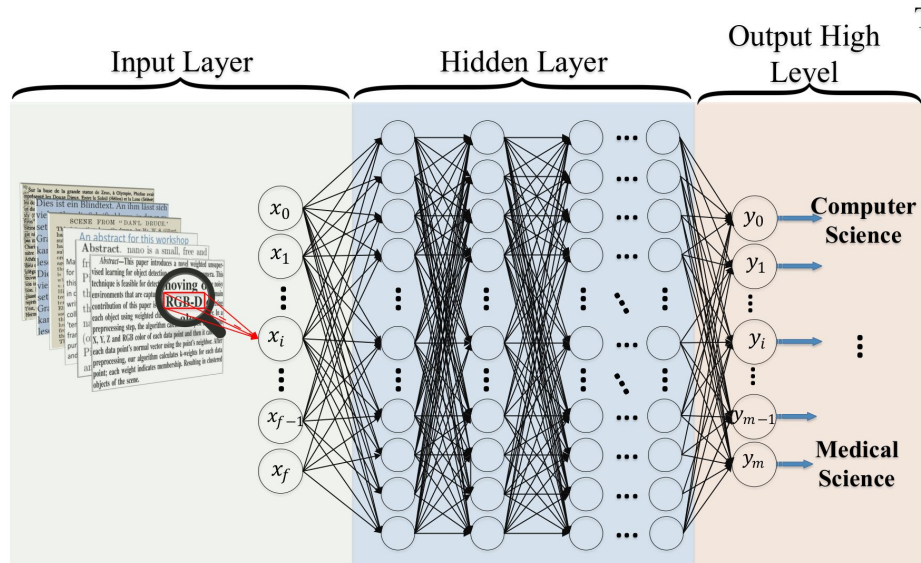
+ Best Performance

− Minor Interpretability

This can unintentionally lead to

BUSINESS NEWS OCTOBER 10, 2018 / 5:12 AM / A YEAR AGO

Amazon scraps secret AI recruiting tool that showed bias against women

Jeffrey Dastin   8 MIN READ

SAN FRANCISCO (Reuters) - Amazon.com Inc's (AMZN.O) machine-learning specialists uncovered a big problem: their new recruiting engine did not like women.

Bias Propagation

Who leads NLP research?

- Few groups of people
- Trust Issue
- Responsibility Issue

We are all NLP users

- Users who use the technology may formulate certain wishes or requirements for the functioning of a technology

- Regulators (organizations) can formulate rules or regulations that engineering products have to meet (e.g concerning discriminations)

Gender Bias in NLP

Now :

- Complex problem
- No one-time fix exist
- Have social consequences

In the Future:

- More pervasive AI
- more complex ML models
- More critical decision

Conclusions

- NLP is pervasive
- Influences our perception of the world
- Particularly charged of morality
- Amplify morality
- Designed by an elite of people
- But is not just an engineering problem
- User responsibility is needed

Thank you for your attention