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Handout for AI & the media: *Wie künstliche Intelligenz die Medieninhalte beeinflusst*

The media plays an important role in informing the public, and in stimulating political engagement. In what way is AI interfering and what can we expect for the future?

AI plays an increasingly large role in steering what information people get to see:

THE BAD: news recommender systems based on metrics that show people more and more of the same lead to a lack in diversity in information sources and skewed world views, focus on engagement also enhances the spread of mis/dis-information (see [1] <https://link.springer.com/article/10.1007/s10462-021-10043-x> for a survey on news recommender systems and their impact on user behavior)

THE UGLY: As it gets increasingly easy to automatically generate text that is as fluent as human text using large language models, that are trained on large amounts of unfiltered texts, it gets increasingly easy to spread toxic language and other harmful content (see [2] <https://dl.acm.org/doi/pdf/10.1145/3531146.3533088> and [3] <https://arxiv.org/abs/2108.07258> for a discussion of possible risks associated with large language models).

THE GOOD: AI can help detect hate speech, can help with gathering evidence for fact checking, lay bare connections between people and organisations from large (web)data, can flag and analyse conspiracy theories, can help find scoops by monitoring social media, and identify deep fakes and their sources. Generative AI can help create quality content more easily. And news recommender systems can bring the right content to the right person.

What AI needs to be able to build helpful tools and perform useful analyses is **data**, if possible organised (labelled or otherwise classified) by human experts. The media have many such interesting datasets. This is why we should collaborate!

Many instruments are available in Switzerland to fund collaboration across sectors and disciplines (Innosuisse, Sinergia, Agora). Drop me a line if you are interested.

Useful links for background studying:

Natural Language processing is a subfield of artificial intelligence that is concerned with textual data and therefore highly relevant for journalism.

a) Video lectures on NLP

Non-expert (short video):

IBM technology: What is NLP?

<https://www.youtube.com/watch?v=fLvJ8VdHLA0>

IBM Technology: NLP vs NLU vs NLG

<https://www.youtube.com/watch?v=1I6bQ12VxV0>

Interview: Dan Jurafsky: How AI is changing our understanding of language

<https://www.youtube.com/watch?v=a44oy7feAus&t=1511s>

In-depth technical:

Stanford CS224N: NLP with Deep Learning | Winter 2021 | Lecture series

<https://www.youtube.com/playlist?list=PLoROMvodv4rOSH4v6133s9LFPRHjEmbmJ>

b) Text book on NLP

Jurafsky, D., Martin, J. H. (2009). *Speech and language processing : an introduction to natural language processing, computational linguistics, and speech recognition*. Upper Saddle River, N.J.: Pearson Prentice Hall. ISBN: 9780131873216 0131873210

3rd ed. Draft:

https://web.stanford.edu/~jurafsky/slp3/ed3book_jan72023.pdf

[1] Raza, S., Ding, C. News recommender system: a review of recent progress, challenges, and opportunities. 2022. *Artif Intell Rev* 55, pages 749–800.

[2] Emily M Bender, Timnit Gebru, Angelina McMillan-Major, and Shmargaret Shmitchell. 2021. On the dangers of stochastic parrots: Can language models be too big? In *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency*, pages 610–623.

[3] Rishi Bommasani, Drew A Hudson, Ehsan Adeli, Russ Altman, Simran Arora, Sydney von Arx, Michael S Bernstein, Jeannette Bohg, Antoine Bosselut, Emma Brunskill, et al. 2021. On the opportunities and risks of foundation models. *ArXiv preprint*.