How AI meets human in media houses?

We are organizing a discussion panel to share experience of public and private media houses with AI, with emphasis on recommender systems. More and more media houses deploy recommender systems to automate content delivery to end users. Recommender systems are often responsible for displaying articles on the frontpage, having significant impact on visitors, their perception of the brand and the social role of media in general. We would like to discuss the following issues that might help to design future user interfaces for editors to bridge the gap between them and AI and build more advanced AI systems with human in the loop. We will be covering questions as How recommender systems and editors can collaboratively produce personalized front pages? Are you measuring and analyzing the impact of recommender systems to the audience? How do you imagine responsible (accountable) AI with human in the loop?

Statement of Dr. Cristina Kadar

The Human-AI symbiosis is a key aspect of the future development of a AI technology which can contribute increased abilities and support in daily activities in a safe and ethical manner.

The advances in AI during the last decade led to automatization of some of the tasks human used to carry out before technology helped them to avoid taking care, especially of repetitive and with high accuracy by the AI systems. One good example is the driving assistance technologies or photos classification.

Going beyond the usual AI towards a real symbiosis there are different aspects which can really change the way AI and humans are collaborating in a symbiotic manner. Some examples happening how are:

First of all in the decision making process. This is something which not only requires AI powerful algorithms but also the AI to integrate the human behaviour in the implementation and knowledge gained. This is crucial in some areas such as health, where the information captured from patients is crucial to take decisions, and AI cannot take decisions on its own but to support human decisions… maybe not the case in some years from now when AI will dominate the medical decision making (e.g. in diagnosis or treatment proposals)?. Not only accurate AI algorithms are expected to be used, but explanatory AI is one of the areas which can lead to a reinforced trust in AI and improved decision-making from both sides with continuous feedback.

Secondly there are areas where the symbiosis will enhance the human activity such as augmented senses. We can have good examples in the literature especially in some domains such as security, but more and more the widespread of AI to enhance the way we perceive the world can lead to an enhanced sensorial experience providing novel capabilities to the humanity. Examples of the wide use of computer vision (e.g. to recognise the environment, classify objects,…), enhanced hearing or augmented contextual understanding can be found currently and will grow in a near future, perhaps in some years we will rely less in our perception and more in the AI input?

Third element is privacy-respectful AI and the use of human data. Human-AI symbiosis doesn't mean that there is a full exploitation of the humans' data with no control. It is fundamental than human ethical and user privacy is respected to collectively embrace the full symbiosis and the powerful changes it can bring to humanity. However, how can AI fully understand ethics and

other abstract concepts such as freedom or politics?At NZZ, we focus our efforts on delivering content recommendation systems that have a clear value proposition to our readers. The recommendations are integrated in prime locations in the product -- such as on the article pages, in the user area, on the frontpage, or in newsletters. In the form of automatic, contextualized or fully personalized article feeds, the recommendations are presented in dedicated containers, with a distinct design and objective as opposed to the editorially curated areas. Furthermore, we are fully transparent towards our users, explaining in layman's terms how the algorithm functions (e.g. [1]).

We work in interdisciplinary teams (product, data, and editorial) and always follow a responsible approach, mindful of the users' needs and concerns (information overload vs. fear of the filter bubble), as well as of the newspaper's editorial judgement and curation principles. Towards that goal, we employ transparent and hybrid algorithmic designs, and value exploration vs exploitation.

For instance, the next reads section on the article pages of the daily newspaper is fully algorithmic-driven and consists of three feeds delivered by the data team: an author feed, a topic feed, and a fully personalized user feed (to learn more about our iterative, data-driven product development process see [2]). The author feed is a contextualized feed surfacing latest articles from the same author, a feature that was long requested by our readers and journalists alike. The topic feed is also a contextualized feed of articles sourced from the same topic as the article in scope. Hundreds of topics are being created semi-automatically by a specialist in an internal tool combining human-in-the loop and natural-language-processing (NLP) techniques. New articles are evaluated and assigned to existing topics instantaneously upon publication. Finally, the user feed is a fully personalized, high-quality feed of next reads leveraging the historical profile of each logged-in user. The recommended articles are selected not only based on their similarity to content the user has consumed in the past, i.e. content-based filtering, but also on other signals such as their popularity and editorial value. The personal, trending, and editorial scores are summed up in a configurable weighted sum towards a more responsible personalization approach in the news domain (for more algorithmic details refer to [3]).

References:

[1]: https://magazin.nzz.ch/information/nur-fuer-sie-wie-unser-empfehlungs-algorithmus-funktioniert-ld.1494731 (in German)

[2]: https://medium.com/nzz-open/fully-redesigned-algorithmic-driven-next-reads-section-on-nzz-ch-4501e5919d66

[3]: https://medium.com/nzz-open/the-value-of-responsible-personalization-in-news-recommender-systems-9c6aedd1ea5c

Statement of Karel Koupil

In December 2020 we stopped to fully control content editorially that approx. 300 external publishers were publishing to our feed content platform. We had decided that this would be the first step to be an open content platform. This unfortunately led to a vast temporary rise of spam exposure. When we looked at traditional KPI as a click or spent time on an item we realized that

users “liked” spammy items because they clicked a lot on them and even did not bounce immediately and read low quality content. But is it really so ? How do you think a content platform should handle this issue?

Statement of Dr. Tana Lancova

AI is the new Guttenberg printer for modern media organizations. From information sorting and gathering, fact-checking, and analysis to automatic content generation and recommendation, AI is undoubtedly becoming a significant game-changer in the news production pipeline, distribution, and consumption.

However, even in established AI fields, such as Recommendation Systems (RSs), a universally applicable guideline on how to systematically adapt intelligent algorithms to the diverse stakeholder needs has yet to be found. For instance, data scientists are able to deploy and evaluate RS’s throughout complex statistical metrics and measure the impact of the recommendation by observing user behavior during an A/B test procedure. But can the non-ML-aware staff understand how the models work and why the recommendation looks the way it does? How do their editorial interventions affect the final form of recommendations? Do they see, if the recommendations serve all users and content fairly?

To reduce the gap and construct bridges between technical and non-technical strands, we will introduce RepSys: an open-source framework that allows diverse stakeholders to interactively evaluate personalized AI solutions. Our aim is to help to find the answers to the questions above and discuss possible directions to construct responsible and understandable recommenders that adapt to the heterogeneity of media organizations

Organiser

Pavel Kordik, associate professor and vice-dean for industrial collaboration at Czech Technical University in Prague. Co-founder of Recombee company providing recommender systems as a service and the prg.ai initiative.

Panel

Cristina Kadar, Phd (NZZ)

Cristina is the Data Science & Machine Learning PO, as well as a Senior Data Scientist at NZZ. She oversees the development of data products such as personalized news recommendations and predictive models for the editorial teams. Additionally, she manages the company's academic collaborations and is an industry expert at the Media Technology Center of ETH Zurich. Cristina completed her PhD at ETH Zurich and University of Cambridge in data science and information systems and has previously worked for organizations such as Credit Suisse and IBM Research.

Karel Koupil (Seznam.cz)

Karel Koupil works as a Product Manager of Recommender Systems at Seznam.cz. His main responsibility is Seznam Feed's recommendation technology. Seznam Feed is a fully personalized, semi-opened publishing platform with a very diverse content. At the moment there

are around 430 unique publishers. Karel has a rich working career, he founded an IT start-up which he subsequently sold. Later he worked in various positions in technology and ML companies.

Tana Lancova (Recombee)

Tana works as a Machine Learning Specialist at Recombee. She is responsible for recommendation quality and customer satisfaction. Working at the intersection of data science, research and product management, she combines experience gained from university studies in theoretical physics and sociology. She has experience in the media world at Czech News Center, where she worked as a researcher for machine learning, and Seznam.cz, where she was a product manager responsible for personalization.