THE COMPARISON OF FAKE NEWS DETECTING AND FACT-CHECKING AI BASED SOLUTIONS

There are about 50 fake news detecting and fact-checking organisations in Europe and double that number in other parts of the world. Fake news detecting, fact-checking and debunking organisations and initiatives rely almost exclusively on manual tracking fake news systems (information disorder), and only rarely employ semi-automated tracking systems. This is costly, inefficient, error-prone and slow process of making sense of information disorder (includes deliberately and accidentally – unintentionally misleading information, unexpected offensive results, hoaxes, and conspiracy theories) in both online and offline environments. Measured by volume, only about 0.25 percent of total content delivered by Google contains offensive or clearly misleading content, but still, this fraction is considered to be potentially damaging for the society. A possible solution appears to be the use of AI powered news and social discourse analysis for such purpose. This article aims at exploring the most recent advances in this strategic research focused on utilisation of AI tools in order to provide up-to-date knowledge and the first comparative assessment of state-of-the-art of AI solutions aiming to detect and debunk fake news and fact-checking. We present the first comparison of the more developed and publicly accessible AI machine-learning tools. This comparison is based on social science approach and thus limited by the availability of sources, reports and technical pilot testing studies. Nevertheless, such first-ever done study should be of interest to social scientists and policy makers.

We identified two key indicators for assessing usefulness of AI-based solutions in fighting information disorder. These are seen as complementary rather than mutually exclusive criteria, as we explain further.

Accuracy and Comprehensiveness

First, it is **accuracy**. By accuracy we mean how precise is an AI solution in detecting and analysing/identifying fake news and hoaxes.

Second, it is **comprehensiveness.** By comprehensiveness we mean how complex is offered AI solution, ie how broadly it covers various aspects of the problem with its functionalities. While accuracy can be very high when focused at a narrow sample, comprehensiveness can be very low. Thus, it is necessary to combine both accuracy and comprehensiveness. Yet there is a methodological challenge here. The narrower the scope, the more likely the AI fact-checking project is to provide practical tools for factcheckers. The more ambitious the scope, the closer it is likely to be to pure research.

The final results, together with particular results for indicators A, B and C, are shown in the Table 1. The nine systems are sorted according to the calculated score. However, numeric differences between some of them are tiny and we should have to take into the account also the subjective features of the methodological approach, as suggested before, too. The grading taxology of existing AI systems and differentiating into «High», «Medium» and «Low» levels for the comprehensiveness would be logically of some subjective uncertainty, too. An overall view on the evaluation results shows a grouping of three items around the mark 60, then a field of achievers between around 44 and 54, and then as the last one, the mentioned Google´s system, probably disposing by some unrevealed qualities, too. So taking into account these empirical valuations, we can for the current purpose assign the “High”, «Medium» and «Low» grade of comprehensiveness to the three parts on the vertical axes, with formal limits at, let´s say, 35 and 55 percent.

The overall results suggest that a third of examined AI systems performs in terms of comprehensiveness in a top category, while majority can be assigned to medium category of comprehensiveness.

Table 1: Assessment of fake news detecting and fact-checking AI tools in terms of the comprehensiveness
(according to the resulting values in %)

	System	Veracity evaluation –> Fake news detection		Detection of manipulation of facts		Useful extra functionalities		Σ for a system
		= Indicator A		= Indicator B		= Indicator C		
	Comprehen-siveness	(weight 70%)		(weight 20%)		(weight 10%)		
	High	resultant	weighted	resultant	weighted	resultant	weighted	
1	**AIPHES**	73.5	51.45%	26.25	5.25%	41.25	4.125%	**60.825%**
2	**Sofia - Qatar**	75.5	52.85%	18	3.6%	39.25	3.925%	**60.375%**
3	**ClaimBuster**	73.5	51.45%	14.25	2.85%	38	3.8%	**58.1%**
	Medium							
4	**DiversiNews**	64.875	45.412%	12.75	2.55%	62.25	6.225%	**54.187%**
5	**BaitBuster**	45,25	31.675%	76	15.2%	44	4.4%	**51.275%**
6	**FiB**	55.375	38.762%	34.25	6.85%	34.5	3.45%	**49.062%**
7	**FightHoax**	35	24.5 %	52.25	10.45%	52.5	5.25%	**44.662%**
8	**FakeRank**	39.25	27,47%	69	13.8%	29.25	2,925%	**44.2%**
	Low							
9	**Search Qual. Rater**	20.75	14.525%	39.75	7.95%	30.75	3.075%	**25.55%**

Conclusion

Although it is unlikely that the AI will play key role in a few next years, it still can contribute partially but nevertheless significantly to detecting and debunking fake news within context of fighting information disorder. This contribution of AI can be even more relevant if there will be involvement of additional AI features in the currently only partially automated fact-checking and fake news detecting systems. Our survey has brought together a first comprehensive but still only tentative overview of some prototypes focused at detecting and debunking fake news and fact-checking with AI features. However, only few of them appear to be independently tested and sometimes these pilot testings show huge discrepancies between claims by producers and testers´ findings. Moreover, very few AI machines developers are interested in providing further details about their products and functionalities for studies like ours. This raises suspicion about their real performance.

Source: Pixabay.com

Compiled by SCM (2019)
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This work has been supported by the European Union H2020 CSA Project COMPACT: From research to policy through raising awareness of the state of the art on social media and convergence, Project Number 762128, Grant Agreement 762128.