AI Is Here To Stay: Misinformation and Human-Centric Models Between Risks and Opportunities

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1 INTRODUCTION

Artificial intelligence has fascinated the scientific community for almost a century, spurring famous research papers such as Alan Turing's *"Computing Machinery and Intelligence"* in 1950 [27], which introduced the *imitation game*. The idea, trivialized, is that any machine capable of fooling a person into thinking it's speaking to a human can be considered sentient. For seventy-three years the game remained unbeaten, until OpenAI's ChatGPT-4 ultimately succeeded in 2023 [2]. The model, simulating AGI capabilities [5], is one of the last iterations of the Generative Pre-Training LLMs[1] pioneered by OpenAI in 2018 (at the moment of writing the latest available is GPT-5.2) [21], which closely followed the first breakthrough towards human-like agents: *"Attention Is All You Need"* [28] is a 2017 landmark research paper authored by eight Google researchers that introduced the *transformer* architecture, considered the backbone of all modern LLMs and the main contributor of the AI boom [15].

Computer scientists are not the only ones engrossed in the topic: philosophers involved themselves too, most notably Jhon Searle and his 1980s' *chinese room* thought experiment, which directly challenged Turing's ideas and refuted the possibility of true machine intelligence [25], and even the general public showed great interest once AIs became smart enough: ChatGPT reached one million users in just five days [17], an astonishing feat when compared to other technologies such as personal computers, which needed almost ten years to reach the same milestone [22].

Despite all of the above, the field of artificial intelligence comes with its fair share of problems and controversies: due to their inherent design, LLMs pose significant privacy risks as sensitive information is collected and used to create and fine-tune the models themselves [11], and their black-box nature makes it difficult to understand and predict their behavior [30]. Moreover, they are often trained on pirated material, like books [23] or art [16], igniting protests in many creative communities, such as hollywood writers [18] or video game actors [20]. It follows that artificial intelligence technologies should be handled carefully, without hindering their development while limiting the damages they can cause to society and individuals.

[1]Large Language Models (LLMs) are trained with supervised machine learning on vast amount of textual data, and are designed for natural language processing tasks, especially language generation [3, 4]

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This survey paper aims to present the current state of research on ethical and human-centric artificial intelligence, exploring how models and humans can influence each other and their environment. Section 2 showcases generation and detection of fake-news, section 3 recognition and simulation of human behaviour, as well as how to influence it. Section 4 concerns itself with biases and tendencies of the models themselves, and lastly section 5 explores ways to develop ethical LLMs that can positively impact individuals and society.

2 AI FOR FAKE NEWS GENERATION AND DETECTION

Fake news have rapidly become a significant concern in the modern digital age, thanks to their virality and potential damages. They spread faster and generate more engagement than truthful information [12, 26], and can influence public opinion, manipulate elections and pose a threat to public health: the European Union issued guidelines to online platforms and search engines to mitigate the impact on misinformation on elections [1], the World Economic forum has identified the proliferation of false content as the leading short-term global risk in 2025 [6], and a BBC investigation found Russian-funded fake news networks aiming to disrupt european elections [14]. Moreover, fake news on health can cause psychological disorders and panic, fear, depression, and fatigue [24], and the World Health Organization called for the development of international fact-checking organizations to combat this phenomenon [19].

Adding to the problem, the recent advancements in generative artificial intelligence have made it significantly easier to propagate disinformation throughout the web: generated content is increasingly indistinguishable from human-written text, sometimes even perceived as more credible [13], citing true evidence to support false claims [9], and inducing the illusion of majority opinion thanks to the sheer volume of information produced [8]. Some works highlights how

Artificial agents can generate more than just text: they can create realistic images, videos and sounds, allowing them to reproduce digital twins of real or fictional people, known as deepfakes. In March 2019, such a technology has been used to trick a UK-based energy firm's CEO into transferring $243.000 to a convincingly mimicked company's German parent firm's CEO [10]. Deepfakes also increased the amount of conspiratorial videos on the internet, and they are especially vicious when targeting children, whose worldviews are easily swayed by deceptive—and highly photorealistic—content [29].

It follows that detecting and mitigating fake news is crucial, especially since the rise of AI-generated content has made disinformation easier to spread and more convincing. From the foundational work by Devlin et al. on *BERT* in 2018 [7], which revolutionized natural language processing trough deep bidirectional transformers, to innovative detection models like *exBAKE* and the application of transformers [TODO]

3 AI ON HUMANS

4 AI OWN BIASES

5 ETHICAL AI

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