AI and Deep Fake - Video and Audio Manipulation Techniques Capable of Altering the Political Process

Marian Oancea[1]

Abstract:
All the important aspects of modern-day society, including global politics, are influenced by AI-generated deep fakes, which nowadays are easier than ever to produce. Present-day politics is also characterized by the rise of illiberalism. The limitations of democratic practices, which occur at a global level, are well documented. However, there is a lack of research meant to classify types of deepfakes and the dangers they pose to democratic practices, such as elections. The goal of this paper is to create a framework in order to describe AI-generated deepfake use, especially in politics. In the long run, the purpose of this framework would be to help future research papers better describe cases in which deepfakes are being used in politics and their effects, especially how these practices are being employed by populist politicians in order to enhance their electoral message. This descriptive paper is based on the qualitative approach of document research, presenting several deepfake categories that can be used in future research in order to create a clear image of the way in which AI-generated deepfakes impact politics. The paper has generated interesting results. There are a multitude of types of deepfakes that originate from various sources. The only difference is the complexity of the technology being used. Another relevant discovery is that deepfakes can be used for multiple purposes, not only to undermine political opponents. Moreover, deepfakes could be used anytime, not just on the brink of elections. This paper is relevant for the study of the dangers deepfakes carry in both national and international politics. It represents a step forward in the research on the implications carried by the use of deepfakes in politics.

---

[1] „Carol I" Central University Library, Head of Research. Innovation. Digitalization Department, Bucharest, Romania, Email: marian.oancea@bcub.ro.

AI and Deep Fake - Video and Audio Manipulation Techniques Capable of Altering the Political Process

1. Introduction

In a digitalized society, technology is present in every aspect of our lives. Political developments are highly influenced by the pace of technological innovation (Gabor, Oancea & Pripp, 2023, p. 68). This tendency should be perceived as dangerous, especially in Europe and North America, regions that have been well known for their firm stance in defending democracy. The digitalization process, which occurs all around us, being accelerated by globalization, can act as a means for the perpetuation of undemocratic tendencies. The present paper intends to classify different types of AI-generated deep fakes. The purpose is to generate a conceptual framework meant to facilitate research on how these practices might affect the political process.

Through this paper, there are highlighted several risks imposed by the use of AI-generated deep fakes, especially now that elections held in democratic nations are being threatened by the rise of illiberalism. In order to have a better understanding of the functioning process of AI, it is necessary to present its conceptual framing and how it could be used by populists and authoritarian regimes in order to reshape the political environment. The main purpose of the paper is to describe different types of deep fakes and to highlight the challenges to democracy posed by these practices. The role of the qualitative method of document research is to determine a classification of deepfake materials and their effects on the general public.

2. Literature Review
a. Artificial Intelligence (AI) – conceptual framework

One of the main particularities of the Fourth Industrial Revolution is represented by the rapidity with which its effects shape global developments. Its predecessors had a limited impact on the so-called Third World. According to the United Nations, Least Developed Countries (LDCs) are defined as *„...low-income countries confronting severe structural impediments to sustainable development. They are highly vulnerable to economic and environmental shocks and have low levels of human assets."* (UN, n.d.) Angola, Myanmar, Nepal, and Yemen are among the 45 countries that are included in December 2023 in this category. Their political, economic, and social fate is influenced by the latest technological evolutions, just like the fate of the United States of America (USA), Germany, or China. Artificial Intelligence (AI), additive manufacturing, augmented reality, blockchain, drones, or advanced robotics are among the elements that build a new reality, which is *„...characterised by a fusion of technologies that is blurring the lines between the physical, digital and biological spheres."* (Adhikari, 2020, p. 42). The fact that the speed with which constant innovations enact worldwide implications is also reflected by the fact that the Fourth Industrial Revolution is doubled by a Fifth one, which *„...encompasses the notion of harmonious human–machine collaborations, with a specific focus on the well-being of the multiple stakeholders".* (Noble, S.M., Mende, M., Grewal, D., Parasuraman, A., 2022) However, one of the key aspects of this paper is to highlight that human-machine collaborations, in certain contexts, can have toxic effects on the stability of liberal democratic political regimes.

Artificial Intelligence can be defined as *„making a machine behave in ways that would be called intelligent if a human were so behaving."* (McCarthy, J., Minsky, M. L., Rochester, N., Shannon, C. E., 2006, p. 12). AI, alongside machine learning, one of its methods, enables the possibility of creating entities that are capable of performing cognitive tasks even more efficiently than human beings. Newly developed algorithms

„...learn from data and develop solutions to problems." (Scharre, P., Horowitz, M.C., Work, R.O., 2018, p. 4). Although the field of AI is currently characterized by narrowness compared to the human ability to multi-task, machine learning has the potential to eliminate this gap in the future. Data is utilized in the construction of neural networks, which fuel the process of deep learning, allowing, among others, results like image recognition or predicting medical outcomes. In areas where a sufficient amount of data is not available, algorithms can continue their evolution by using synthetic data generated through computer simulation (Scharre, P., Horowitz, M.C., Work, R.O., 2018, p. 6). The remarkable progress of AI is also reflected in its ability to master games, including ones that hide essential information from algorithms, like poker. Thus, it can be argued that gradually AI can replace, at least in certain domains, human expertise.

The implications of these evolutions can be unprecedented in the history of humanity. AI offers endless opportunities for the improvement of our lives, constantly upgrading its ability of presenting tools that can help us overcome the social or economic challenges that shadow the first decades of the 21st century: *„Communications, healthcare, disease control, education, agriculture, transportation (autonomous vehicles), space exploration, science, and entertainment are just a few of the areas already benefiting from breakthroughs in AI"* (Kavanagh, C., 2019, p. 13). On the other hand, as mentioned before, this process has also a dark side: *„As the scope, use, and usefulness of these systems have grown for individual users, researchers in various fields, companies and other types of organizations, and governments, so too have concerns when the systems have not worked well (such as bias in facial recognition systems), or have been misused (as in deepfakes), or have resulted in harms to some (in predicting crime, for example), or have been associated with accidents (such as fatalities from self-driving cars)."* (Manyika, 2022, p. 6)

Governments have the responsibility of identifying both the possible threats posed by the development of AI and the domains where algorithms can be used in the benefit of the public good. For instance, in the USA, the Department of Defense and the intelligence community are combining machine learning, image recognition, and natural language processing to boost the efficiency of the analytical activity (Hunter, A.P., Sheppard, L.R., Karlen, R., Hunter, A.P., Balieiro, L., 2018, p. 28).

In the last years, the development of AI also influenced national power projections. Political leaders like former US President Donald Trump, Russian President Vladimir Putin, and Chinese President Xi Jinping have stated that machine learning algorithms can be used as tools for promoting the strategic interests of their states. AI is slowly becoming a tremendous weapon in geopolitical conflicts. Therefore, members of the academic community and civil society organizations are claiming that this domain must be regulated through a clear and enforceable legal framework (Kavanagh, C., 2019, p. 14).

The future of AI, although linked to both optimistic and grim scenarios, is still quite misty. Some researchers suggest that in approximately 50 years, AI will be able to carry out most professions at least as well as humans. On the other hand, a global catastrophe like a nuclear conflict or an aggravation of the climate crisis could derail progress, which at this moment could seem unstoppable. Moreover, legal and ethical concerns could cause governments to abandon developing this field. This aspect highlights once again the necessity of a *„... responsible supervision, regulation, and governance of the design and deployment of AI systems...".* (De Spiegeleire, S., Maas, M., Sweijs, T., 2017, p. 55)

AI and Deep Fake - Video and Audio Manipulation Techniques Capable of Altering the Political Process

In certain conditions, AI can become a threat to human rights. For instance, algorithms can be used for the surveillance of ordinary citizens; therefore, their right to privacy is denied. Furthermore, using AI in the legal system could create conditions for discriminating against certain social categories. These challenges require the development of the so-called „ethic of data", which could minimize numerous risks that are posed by the utilization of AI. The European Commission already took important steps in this direction (Cataleta, M. S., 2020, p. 7). Another issue that needs the attention of governments and NGOs is one that was already mentioned above deep fakes.

b. Deep Fake

A deep fake is *„...a digital forgery created through deep learning (a subset of AI). Deep fakes can create entirely new content or manipulate existing content, including video, images, audio and text. They could be used to defame targets, impersonate or blackmail elected officials and be used in conjunction with cybercrime operations."* (Smith, H., Mansted, K., 2020, p. 5)

Deep fakes first emerged in 2017 and made an important contribution to blurring the thin line between facts and fiction in the political arena. The so-called „democratization" of this tool allows even ordinary citizens to create and spread false messages that can alter the way public opinion sees certain political leaders or groups. Face swapping, lyp syncing, and image or audio generation are among the most common versions of deep fake (a detailed presentation of different types of deep fakes will be realized below). For example, a fake video presenting a speech of Richard Nixon regarding the Moon landing was created through lyp syncing (Smith, H., Mansted, K., 2020, p. 7).

In Romania, the vicepresident of The National Authority for Management and Regulation in Communications (ANCOM), Pavel Popescu, stated that the Russian Federation is promoting deep fakes in the online environment in order to boost social unrest (Digi24, 2024). The Romanian Minister of Energy, Sebastian Burduja, a member of the National Liberal Party (PNL), was apparently targeted by a deep fake in January 2024. Burduja took legal action to identify and hold the perpetrators accountable (Ministerul Energiei, 2024). In the United States of America, in January, an audio deep fake (voice cloning) mimicking President Joe Biden's voice was sent to voters from New Hampshire in order to dissuade them from participating in the primaries organized by the Democratic Party for selecting its presidential candidate for the 2024 elections (Swenson & Weissert, 2024).

Deep fakes are on the verge of becoming formidable weapons in disinformation campaigns and influence operations worldwide. Authoritarian regimes and non-state actors, as well as liberal democracies, can make use of the dark side of deep learning to achieve their strategic goals. It is important to keep in mind that algorithms are neither good nor bad on their own, the intentions behind their utilization being the ones that shape their political and social impact (Nurkin, T., Rodriguez, S., 2019, p. 25).

The United States Government is viewing deep fakes as a great danger to the American political system, given that experts proved in 2017 that they can create a „synthetic" version of former Democratic President Barack Obama. Moreover, the then-president of the House of Representatives, Nancy Pelosi, was targeted in 2019 by a relatively successful disinformation campaign that used deep learning (Nurkin, T., Rodriguez, S., 2019, p. 37).

As mentioned above, authoritarian states like China or the Russian Federation, to create disruptions in the global geopolitical order, can use their capabilities to create deep fakes that have the potential to destabilize liberal democracies. However, domestic political actors can also maliciously use deep learning to increase the chances of obtaining or maintaining political power. Populist and/or radical parties, if allowed by the hesitancy of their opponents, can exploit AI to shape an uneven political playing field. This threat is particularly important in periods with highly consequential election being held both in the European Union (EU) and in the USA.

3. Methodology

AI-generated deepfakes have only recently been used as a means to undermine public figures, especially politicians. Due to the fact that this practice is still considered a novelty, the nature of this research is descriptive, aimed at "gathering data and facts" (Mitulescu, 2011:35), with the purpose of "highlighting unknown phenomena" (ibidem). Exploring uncharted territory requires caution, and due to the lack of quantitative data, this research employs the qualitative method of documentary research, which, paradoxically, is not based on the document itself but rather on "the social reality described by it" (Chelcea, 2007: 509). This paper uses *public documents* that "are of interest for the whole human collectivity, concerning the political-administrative life of the state" (ibidem: 511). The paper is built upon a few academic documents presenting different types of deepfakes.

4. Classification and analysis of deepfake techniques

Farid and Schindler have identified in their work, „*On the Threat of Deep Fakes to Democracy and Societ*y" three distinct categories of deepfake actions, which can be undertaken against public figures. The first category is „*face swaps*" and according to the authors, it takes place when „ the face in a video is automatically replaced with another person's face" (Farid & Schindler, 2020:15). The second category is names lip-sync, and occurs when „ *a source video is modified to make the mouth region consistent with an arbitrary audio recording"* (Farid & Schindler, 2020:16). Lastly, there is the *Puppet Master*, case in which an expert is animating a certain image of a person, modifying gestures such as „*head movements, eye movements, facial expressions"* (ibidem). Multiple types of deep fakes were identified and will be briefly explained.

Deep fakes generated by complex AI programs are an integrated part of our reality, and „*exist in society as a form of social practice"* (Bañuelos Capistrán, 2022: p.4). Researchers from media and digital field of studies believe that AI generated deep fakes can be applied in all of the fields of the discursive genre, which is defined as *"a specific form of language use, text, sound, image, a complete communicative event in a given social situation"* (ibidem.). Moreover, it enables communication, by contributing to the creation of *"interactions between individuals and social groups"* (ibidem)

Face Swaps, a type of deepfake, eponymous with one of the categories previously mentioned, is one of the most frequently used techniques in order to defame public figures, as Desai mentiones „*deepfakes are media content, usually involving face-swapping".* (Desai, 2021: 2)

This practice means that, through a computer program, the face of a person is attached onto the face of another. It can be done on all means of digital communication, including photos and videos. However, the quality of the final product varies depending on the used program. Naturally, if the face swap is made with a free app, it will have a

lower quality then if it is made with an AI program which costs money. At the moment, one popular open-source program for this kind of deep fake is „FaceFusion" (Lanz, 2023).

      Lip Syncing, as the name suggests, refers to the mouth's movements. By using this type of deepfake, false statements of different dimensions, ranging from merely single words to complex phrases, can be falsely attributed to personalities from different domains.

      Voice Cloning, or the way AI programs generate words which a person has never said. The programs which are being used not only create words. The intriguing part is that they manage to reproduce the voice of the person who seems to be talking. The result is convincing, *„In some cases, the difference between the real and fake voice is imperceptible to the average person"* (Martin, 2023). However, it should be emphasized that if the average person does not identify the difference between the authentic voice and the one reproduced by the program, it does not mean that it is foolproof. The success of this procedure is amplified if it used along-side lip-syncing. Apps used for voice cloning: Murf, LOVO, Play.ht, Respeecher, Overdub, ReadSpeaker, Listnr, Coqui, Veritone Voice, Voicemod (Basheer, 2024)

      Gesture Mimicking is more complex than the previous ones and does not rely solely on simple reproduction. It consists of two different steps. First, the program closely analyses the movements and gestures of the target/victim. Secondly, it reproduces the person's gestures in certain situations. It is more complex, because it uses algorithms which manage to adapt the analyzed movements to new environments and situations. It is based on the gesture recognition technology, which, in the beginning, was not designed as a misinformation tool, and served different purposes because it was used in different sectors such as the gaming industry and V.R. augmentation.

      Entire Body Deepfakes incorporate all the deepfake techniques previously discussed. It replaces the whole body of a person. Thus, it surpasses face swapping or gesture mimicking in terms of complexity. However, it also has shortcomings. First of all, in order for this technology to be able to reproduce whole bodies it requires a starting point, somewhat of a body double. You still have to find someone who looks a bit like the person you're trying to imitate, though. (Anderson, 2022). Another obstacle this technique might face is the program which identifies usage of AI programs (Clark, 2023).

      Expression Mapping is somewhat similar with the previously described technique of face swapping. However, the main difference is that *Expression Mapping* does not concentrate on the whole face of the individual. Thus, it narrows down the number of attributes which are analyzed, and focuses on the expressions, rather than on the face as a whole. Expression Mapping might represent an opportunity through which face swapping might be perfected, thus generating an enhanced result. The technology behind expression mapping stems from face recognition programs, which *"maps facial features from a photograph or video and then compares the information with a database of known faces to find a match"* (Stouffer, 2023). An example of face recognition application is Amazon Rekognition. Expression mapping is somewhat more complex, because it analysis the physical traits of a person's face, which are added onto the face image of a double, thus generating a picture which resembles almost perfectly the real person**.** Expression mapping is part of a procedure called a triple, which is composed of *"set of target images, fake images and original images"* (Liang et al., 2022: 35) The

fake images are constructed based on original images, and are very similar with the target images.

Scene Generation might be one of the earliest forms of AI deepfake. This procedure is somewhat linked with the cinematic practice through which the background of the scenes is computer generated. However, AI generated scenes are more complex than background images created with the help of the green screen in the motion pictures industry, given that that a scene generated by AI is more dynamic than the background of a movie.

Deepfake Text - AI programs are not limited to visual creations. These applications are able to generate text, based on the discussion between the user and the AI program. Similar to the previously mentioned applications, the AI program is inspired by what it finds on the internet. Thus, it is susceptible to programs which detect plagiarism. Moreover, an interesting phenomenon is that AI programs which generate text do not necessary improve with time. For example, *„ChatGPT Quality has worsened"* (Montti, 2023), even though it has been subjected to several upgrades.

Deepfake Audio - deep fakes generated by AI programs usually concentrate on images, either static such as photos or dynamic, such as videos. However, audio materials generated by AI programs should not be neglected. For example, deep fake audio are more complex than voice cloning because in addition to voice mimic, it also generates background noises, giving the material more credibility. It is interesting to note that there are not many applications dedicated solely to the construction of deep fake audio. Most of them are concentrating on replicating peoples' voices and overlook background noises. However, some applications which do not omit them are "Lyrebird AI" (www.descript.com, n.d.) and "CereVoice" (www.cereproc.com, n.d.)

Deepfake Art and Restoration create a robust and complex product. It has multiple applications which can be grouped into two categories. On one hand, this type of applications can contribute to the representation of lost or deteriorated art products such as painting, furniture, buildings etc. For example, AI programs have been used in the restoration process of the Notre-Dame Cathedral, helping architects and engineers to *„understand the damage and guide the rebuilding process"* (Melendez, 2023). Besides architecture, these programs can also *"impact archaeological work"* (Cobb, 2023: 363) by reproducing 3D models of ancient structures such as temples, palaces and other monuments based on the information which is provided by the archeological discoveries. On the other hand, this type of applications can be used in order to generate innovative art. For example, an art exposition Macau presented painting inspired by the works of Vincent Van Gogh, which were made with the help of AI programs. (Lo, 2023). For example, Mid-Journey, an AI application can be used in order to generate great quality magazine front-covers.

5. HOW CAN VIDEO AND AUDIO MANIPULATION TECHNIQUES APPS INFLUENCE THE ELECTIONS?

Modern day technologies, also known as *"new media synthesis technologies"* (Diakopoulos & Johnson, 2019: 1) such as video and audio manipulation technologies, alongside AI platforms are able to generate products such as images and videos which could be included in the category of deep fakes, which can *"have significant implications for the integrity of many social domains including that of elections"* (ibidem). According to Anderau, the main purpose of fake-news is that of *"being deliberately misleading"* (2021: 197). Nowadays, due to the fact that this kind of public

manipulation techniques are being used in political campaigns, they are directly damaging the public opinion and trust in politicians, by attacking the public image of candidates *"fake news targeted specific politicians"* (Cantarella, Fraccaroli & Volpe, 2023: 8). Evidences vetted by the academic community prove that *"traditional media such as newspaper, television and the internet affect voting behavior"*. (ibidem: 2). A major negative consequence of these kind of practices is the undermining of the electoral process which can take place either by falsely convincing people to change their vote or by discouraging them from voting completely.

Deepfakes can be used in order to manipulate voter perception, by discrediting public figures, such as political candidates and their family and friends. An interesting experiment showed the way people are influenced by Facebook posts. The study found that *"when exposed to stimuli with positive or negative emotional content, people within social networks tend to replicate this in their own posting behavior."* (Bakir & McStay, 2017: 169) The same authors believe that "Fake news already represents an increase in emotional charge" (ibidem). Thus, deep fake posts have a double impact onto people. First, they manage to influence their perception regarding a certain politician or electoral topic. Secondly, once the voters are *contaminated,* they, in turn, disseminate the false content, contributing to the spread of fake news. Thus, a never lasting cycle is initiated, which is perpetuated by both social networks and online news outlets, with the help of *"news-based filter bubbles"* (ibidem). Authors believe that, in the near future, based on the influence of news filter and social networks, voters might become the target of *"computer-generated fake news, weaponized and optimised to resonate with social media users"* (ibidem: 170.) The authors are referring to deep fake built by AI, which might be able to target social media users based on their online activity patterns, which indicate their preferences.

Today there are many ways to use deepfake content to manipulate voter perception such as:

Non-Verified Deepfake Allegations are able to generate robust products, which, sometimes, might be difficult to debunk. However, a balanced perception should be maintained. On one hand, that AI programs represent a modern evil and are the source of all the misinformation from the political scene. On the other hand, the impact of AI generated deep fakes towards electoral behavior should not be diminished. This being said, the belief that all the political misinformation is a direct result of AI programs should be avoided. There have been cases in which it was proved that deepfakes from political campaigns were not a result of AI programs, but generated by standard technology/applications, such Photoshop or other "analog" programs.

Misinformation Campaigns have the sole purpose of generating misinformation. These were based on multiple types of fake news, including deepfake techniques. These campaigns can have a double purpose. On one hand, they present a populist politician in a positive stance. On the other hand, they put members from the opposition in a negative spotlight. Generally, it is used in the latter situation. Most commonly, videos are being used in misinformation campaigns because they are more expressive and thus manage to exercise a greater influence on voters. An important characteristic of a misinformation campaign is that it occurs during an extended timeframe and might include multiple negative deepfakes aimed at the same candidate.

Public Awareness Stunts - one should not believe that deepfake programs ought to be used only for negative/defamatory actions. Properly used, this technology can also have a positive, informative impact on society. For example, several civic

groups, NGO s, think tanks and politicians have used *"public awareness stunts"* in order to openly emphasize the capacities and abilities in which deepfake applications could be used. However, even though the main purpose of these stunts was to convince people that they need to be careful about what they access online, in some situations it generated an undesired, negative effect. Some people who watched/viewed deepfake public awareness stunts only became more suspicious about what they access online, including real videos. (Stokel-Walker, 2023)

Manipulation of Diplomatic Statements - deep fakes can be promoted anytime, not only during electoral campaigns, in order to discredit or promote candidates. They could be used in any context, by presenting an elected leader in a computer-generated video or audio recording which issues statements which might generate negative reactions, such as civil, political or social unrest. (Lall, 2018)

Spoofing Candidates - since the phenomenon of deepfake has gained popularity, politicians and public figures became more self-aware, if not fearful, towards the possibility that any photography or recording of them, whether video or audio, might be distorted by AI programs. There are multiple reasons for which people are afraid of deepfakes. First, there is a *"general moral panic about new technologies"* (Faragó, 2019: 43), which induces a general sentiment of fear towards the deep fakes and the AI technology which produces them. Second, there is an individual panic, which stems from the fear that AI might affect public figures on a personal level, by generating a deep fake which could ultimately affect them, cause them to *"lose their jobs or altogether to destroy any prospect for their current or future careers."* (ibidem). Most affected people seem to be politicians who lose elections, but one can imagine the types of problems deep fakes could generate to an ordinary person.

Laws and Preventive Measures - experts state that the main issue in trying to regulate AI generated deepfakes is to implement the rules due to *"the lack of proper enforcement of the existing and potential additional rules"* (van der Sloot & Wagensveld, 2022: 4). Rules might be stem from two separate sources. First, it is the rule of law, represented by regulations imposed by both national and supranational organizations. An example would be the reintroduction, via congressional vote, of the *Algorithmic Accountability Act,* meant to "*help regulate new generative AI systems to protect constituents from potential harm."* (Government Technology, 2023) Second, there are the regulations which are based on internal policies of corporations which own social networks such as Meta or X. For example, Meta, the corporations which owns Facebook and Instagram will start to implement *"labels acknowledging the use of AI"* (Klepper, 2023) onto deepfake productions, such as photos and audio or video recordings.

In conclusion, our endeavor not only illustrates the different types of deepfake but also presents the ways in which these practices are being used and emphasizes that AI products are meant for permanent use, not only during elections. Moreover, this paper not only represents a framework for future academic endeavors within this field; it also illustrates that deepfakes can be employed with both positive and negative implications.

The study's results could represent a starting point for future research focused on cases that highlight the capability of deepfakes to upturn the mechanisms that guarantee the functionality of liberal democratic regimes. Given the speed of technological developments, including in the AI sector, and the role of globalization in spreading the effects of these developments, it's highly probable that politics will be

heavily influenced worldwide by the instruments we described above. It is important to keep in mind that globalization's effects on a social, economic, or political level can also be negative (Gabor, 2023, p. 55). The pace of AI's evolution is also the source of the paper's main limitation. The overview described in this study is constantly evolving; its main aspects can change their shape within months or even weeks. However, inarguably, this endeavor is helpful for better understanding the depth and particularities of the challenge posed to liberal democracies by deepfakes.

References:

Adhikari, R. (2020) „Fourth Industrial Revolution: From Least Developed Countries to Knowledge Societies". In: Ahmad, A. *Corridors of Knowledge for Peace and Development*. Sustainable Development Policy Institute, Sang-e-Meel Publications, Lahore.

Anderau, G. (2021). Defining Fake News. *KRITERION – Journal of Philosophy*, 35 (3), 197–215

Anderson, M. (2022). The Road to Realistic Full-Body Deepfakes - Metaphysic.ai. *Metaphysic*, September 22, 2022. Available at: https://blog.metaphysic.ai/the-road-to-realistic-full-body-deepfakes/. Accessed on February 21, 2024

Bakir, V., McStay, A., (2017). Fake News and The Economy of Emotions. *Digital Journalism*, 6 (2), 154–175.

Bañuelos Capistrán, J. (2022). Deepfake evolution: Semantic Fields and Discursive Genres (2017-2021). *Revista ICONO 14. Revista científica de Comunicación y Tecnologías emergentes*, 20 (1), 1–20.

Basheer, K.C.S. (2024). 10 Best Voice Cloning Software of 2023. *Analytics Vidhya*, February 5, 2024. Available at: https://www.analyticsvidhya.com/blog/2023/10/best-voice-cloning-software/ Accessed on February 7, 2024

Cantarella, M., Fraccaroli, N., Volpe, R., (2023). Does Fake News Affect Voting behaviour? *Research Policy*, 52 (1), 1-12.

Cataleta, M. S. (2020) *Humane Artificial Intelligence: The Fragility of Human Rights Facing AI*. East-West Center.

Cere Proc (n.d.). *CereVoice Me Voice Cloning Service | CereProc Text-to-Speech*. Cere Proc . Available at: https://www.cereproc.com/en/products/cerevoiceme. Accessed on January 12, 2024

Chelcea, S. (2007). *Metodologia cercetării sociologice : metode cantitative şi calitative*. Bucureşti: Editura Economică.

Clark, E. (2023). The 10 Best AI Content Detector Tools. *Forbes*, . 14 December, 2023. Available at: https://www.forbes.com/sites/technology/article/best-ai-content-detector-tools/?sh=51b311575d5e. Accessed on January 14, 2024

Cobb, P.J. (2023). Large Language Models and Generative AI, Oh My! *Advances in Archaeological Practice*, 11 (3), 363–369.

De Spiegeleire, S., Maas, M., Sweijs, T., (2017). AI – Today and Tomorrow. In: *Artificial Intelligence and the Future of Defense: Strategic Implications for Small- and Medium-Sized Force Providers*, Hague Centre for Strategic Studies, 43–59.

Desai, A. (2021). Face/Off: the Damaging Impacts of Deepfakes. *The Center for Legal and Court Technology*, April, 2020. Available at:

https://legaltechcenter.net/files/sites/159/2021/11/FaceOff-The-Damaging-Impacts-of-Deepfakes.pdf Accessed on February 12, 2024

Descript (2024). Overdub: Ultra realistic text to speech voice cloning – Descript, *Descript*. Available at: https://www.descript.com/overdub. Accessed on February 14, 2024

Diakopoulos, N., Johnson, D., (2019). Anticipating and Addressing the Ethical Implications of Deepfakes in the Context of Elections. *SSRN Electronic Journal*. Available at: https://doi.org/10.2139/ssrn.3474183 Accessed on February 15, 2024

Digi24 (2024). Pavel Popescu, vicepreședinte ANCOM: Rusia folosește cu succes dezinformarea în România. Îngrijorător e fenomenul deepfake, *DIGI 24*, January 17, 2024. Available at: https://www.digi24.ro/interviurile-digi24-ro/pavel-popescu-vicepresedinte-ancom-rusia-foloseste-cu-succes-dezinformarea-in-romania-ingrijorator-e-fenomenul-deepfake-2653639. Accessed on January 26, 2024.

Faragó, T. (2019). Deep Fakes – an Emerging Risk to Individuals and Societies Alike. *Tilburg Papers in Culture Studies*, 237, 1–62.

Farid, H, Schindler, H.-J, (2020). Deep Fakes - On the Threat of Deep Fakes to Democracy and Society, *Kas*, 1–35. Available at: https://www.kas.de/documents/252038/7995358/On+the+Threat+of+Deep+Fakes+to+Democracy+and+Society.pdf/63b0d550-f154-f2ba-ae57-cf40d60794b2?version=1.0&t=1593442701740. Accessed on February 20, 2024

Gabor, E. (2023) „The Contemporary European Social Democracy: Downfall and Resilience as Reflected by the Romanian (PSD) and Dutch (PvdA) Center-Left", 49-57. In Țăranu, A., Németh, I. P., Gabor, E., Falus, O., Zákota, Z. (eds.) *Changing the Path. Crisis, Society, and Politics in the Contemporary World*. Civil Szemle: Special Issues. Budapest & Dunaújváros: Civil Szemle Alapítvány–DUE Press.

Gabor, E., Oancea, M., Pripp, V. (2023) „Digital Democracy and the Growing Threat of Illiberalism. Opportunities and Limitations as Reflected by the Estonian Case." *Perspective Politice*. Vol. XVI (1-2), 66-84.

Gencraft (2024). *Gencraft - what will you create?* Gencraft. Available at: https://gencraft.com/. Accessed on January 25, 2024

Government Technology (2023). *Lawmakers Reintroduce Bill to Regulate Use of AI Systems*. GovTech. Available at: https://www.govtech.com/artificial-intelligence/lawmakers-reintroduce-bill-to-regulate-use-of-ai-systems. Accessed on December 15, 2024

Hunter, A.P., Sheppard, L.R., Karlen, R., Hunter, A.P., Balieiro, L. (2018) Artificial Intelligence and National Security: The Importance of the AI Ecosystem. *Center for Strategic and International Studies* (CSIS), 24–34.

Kavanagh, C. (2019) *New Tech, New Threats, and New Governance Challenges: An Opportunity to Craft Smarter Responses?*. Carnegie Endowment for International Peace.

Klepper, D. (2023). To Help 2024 voters, Meta Says It Will Begin Labeling Political Ads That Use AI-generated Imagery, *AP News*, November 9, 2023. Available at: https://apnews.com/article/meta-facebook-instagram-political-ads-

deepfakes-2024-c4aec653d5043a09b1c78b4fb5dcd79b   Accessed on February 22, 2024

Lall, R. (2018). Deepfake technology could create huge potential for social unrest and even trigger wars, *The National News*, Available at: https://www.thenationalnews.com/opinion/comment/deepfake-technology-could-create-huge-potential-for-social-unrest-and-even-trigger-wars-1.755842. Accessed on January 2, 2024

Lanz, J.A. (2023). *How to AI: Make Deepfakes with FaceFusion*. Decrypt. Available at: https://decrypt.co/201688/how-to-ai-deepfake-video-facefusion-face-swap-ai-tool Accessed on February 5, 2024

Liang, B., Wang, Z., Huang, B., Zou, Q., Wang, Q., Liang, J. (2022). Depth Map Guided Triplet Network for Deepfake Face Detection. *Neural Networks*, 159, 34–42.

Lo, Z. (2023). AI Art Meets Van Gogh at This Macau Exhibition That Pushes the Boundaries of Digital Art, *Tatler Asia*, July 10, 2023. Available at: https://www.tatlerasia.com/lifestyle/arts/van-gogh-ai-art-macau-exhibition Accessed on February 5, 2024

Manyika, J. (2022) „Getting AI Right", *Daedalus*, 151(2), AI & Society, 5-27.

Martin, K. (2023). *What is Voice Cloning?* ID RND. Available at: https://www.idrnd.ai/what-is-voice-cloning/ Accessed on February 19, 2024

McCarthy, J., Minsky, M. L., Rochester, N., Shannon, C. E. (2006). A proposal for the dartmouth summer research project on artificial intelligence, August 31, 1955. *AI magazine*, 27(4), 12.

Ministerul Energiei (2024). Sebastian Burduja, Ministrul Energiei, a depus o plângere penală pentru o tentativă de deep fake, prin care se încearcă păcălirea românilor, 22 January 2024. Available at: https://energie.gov.ro/sebastian-burduja-ministrul-energiei-a-depus-o-plangere-penala-pentru-o-tentativa-de-deep-fake-prin-care-se-incearca-pacalirea-romanilor /. Accessed on: January 26, 2024.

Mitulescu, S. (2011). *Metode de cercetare în stiintele sociale.* Bucureşti: Editura Pro Universitaria

Melendez, S. (2023). How Digital Modeling Plays a Key Role in Restoring the Notre Dame Cathedral, *Fast Company,* Aprilie 14, 2023. Available at: https://www.fastcompany.com/90881189/digital-modeling-restoring-notre-dame-cathedral Accessed on February 9, 2024

Montti, R. (2023). Researchers Find That OpenAI ChatGPT Quality Has Worsened. *Search Engine Journal,* July 20, 2023. Available at: https://www.searchenginejournal.com/chatgpt-quality-worsened/492145/ Accessed on December 8, 2023

Noble, S.M., Mende, M., Grewal, D., Parasuraman, A. (2022) „The Fifth Industrial Revolution: How Harmonious Human–Machine Collaboration is Triggering a Retail and Service [R]evolution", *Journal of Retailing*, 98(2), 199-208 ISSN 0022-4359, https://doi.org/10.1016/j.jretai.2022.04.003.

Nurkin, T., Rodriguez, S. (2019) „A Framework for Understanding Applied AI". In: *A Candle in the Dark: US National Security Strategy for Artificial Intelligence, Atlantic Council.*

Reuters (2019). *Malaysia Sentences Five Men to jail, Caning and Fines for Gay Sex,* Reuters, November 7, 2019. Available at:

https://www.reuters.com/article/idUSKBN1XH19Y/ Accessed on January 20, 2024.

Scharre, P., Horowitz, M.C., Work, R.O. (2018) *Artificial Intelligence: What Every Policymaker Needs to Know*. Center for a New American Security.

Smith, H., Mansted, K. (2020). „What's a deep fake?". In: *Weaponised deep fakes. National security and democracy*, Australian Strategic Policy Institute.

Stokel-Walker, C. (2023). *Awareness of Deepfakes Can Make People More Suspicious about Real videos, a Study Finds*. Fast Company. October 26, 2023. Available at: https://www.fastcompany.com/90972690/awareness-of-deepfakes-can-make-people-more-suspicious-about-real-videos-a-study-finds Accessed on 22 February, 2024

Stouffer, C. (2023). What Is Facial recognition? How Facial Recognition Works, *Norton,* July 21, 2023. Available at: https://us.norton.com/blog/iot/how-facial-recognition-software-works Accessed on January 26, 2024

Swenson, A., Weissert, W. (2024) New Hampshire investigating fake Biden robocall meant to discourage voters ahead of primary, *Associated Press*, January 23, 2024. Available at: https://apnews.com/article/new-hampshire-primary-biden-ai-deepfake-robocall-f3469ceb6dd613079092287994663db5. Accessed on February 29, 2024.

UN (n.d.). „*Least Developed Countries (LDCs)*". *Department of Economic and Social Affairs Economic Analysis*. Available at: https://www.un.org/development/desa/dpad/least-developed-country-category.html. Accessed on January 17, 2024.

van der Sloot, B., Wagensveld, Y. (2022). Deepfakes: regulatory challenges for the synthetic society. *Computer Law & Security Review*, 46, 1–15.

VEED (2024). *Scene Generator - Generate Scenic Images*. Available at: https://www.veed.io/tools/ai-image-generator/scene-generator Accessed on January 19 2024