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Artificial Intelligence and Fact Checking in Africa: Between the Logic of Dependency and the Limits of Automation

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Abstract

This article focuses on fact-checking initiatives in the context of the rise of artificial intelligence. With reference to theories of the political economy of communication and platform studies, this study sheds light on the very confusing evolution of initiatives in Africa. The approach combines content analysis and distanced observation of two fact-checking platforms, chosen on the basis of their local roots and the experimentation of smart tools: Africa Check and Check4Decision. The results highlight the economic and technological dependencies of African platforms on GAFAM via fact-checking services and an automation process that is far from complete with regard to local realities. It appears that the African context provides a different perspective with structural constraints and "cultural" algorithmic biases.

Keywords: Artificial intelligence, fact-checking, GAFAM, usage, platformization, Africa

Introduction

In the field of journalism, the question of whether artificial intelligence (AI) will replace or liberate journalists is being debated (Watine and Gramaccia, 2018, p. 21) and the future of journalism is being closely scrutinized (Marconi, 2020). At the same time, "Artificial intelligence tools are gaining popularity in newsrooms" (St-Germain and White, 2021). Indeed, the range of possibilities is very wide, including data detection and extraction,

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verification, production of stories or graphs, dissemination (with sorting, selection, prioritization filters) or even the classification of articles (*automatic tagging*). Research is increasingly tending to limit the challenges of AI to the exemption of tedious tasks or the reading of data impossible on a human scale.

Few studies question the potential effects of artificial intelligence on information verification. However, AI-related tools mainly come from large media companies (Beckett, 2021; Keefe *et al.*, 2021) or web giants causing inequality in access to these tools. It is clear that the African media are struggling to establish a strategy around automated fact-checking whether it is a machine learning technologies or natural language processing. Access to these tools is expensive and requires specific partnerships with the GAFAM,[1] which are "as many opportunities as opportunism" (Bigot and Nicey, 2020). With this in mind, fact-checking platforms are collaborating with giants such as *Google* and *Facebook*, with the stated aim of fighting against online disinformation. However, automated *fact-checking* initiatives have yet to be discovered in the context of the rise of artificial intelligence. At this level, the African field is of interest and can offer a different perspective based on local initiatives and realities.

The question that immediately arises is that whether automatic verification initiatives reinforce the economic links and technological dependence on the GAFAM or does it fit into platform logic obscuring local contexts and the humanization of practices with a risk of failure of experiments. This study, which is intended to be exploratory, postulates, on the one hand, that the initiatives deployed by *Google and* Facebook *are marked by ambiguities with, on the one hand, economic underpinnings and logic of domination, and on the other hand*, the hypothesis of semi-automated verification which remains more perceptible in view of the constraints and realities on an African scale.

The research navigates the intersection of theories related to the political economy of communication, platform studies, and Artificial Intelligence (AI). It employs social logic to elucidate the complex evolution of automated fact-checking initiatives in Africa. This study focuses on the fact-checking website, *Africacheck*, and the local system, *Check4decision*, which have been tested by Senegalese academics. The article first specifies the theoretical anchoring and the methodological approach. It then analyzes the economic logic of dependency, platformization, and experimentation, surrounding these initiatives and ultimately outlines the limitations of automatic verification in the African context.

1 GAFAM is an acronym of Google (Alphabet); Apple; Facebook (Meta); Amazon; and Microsoft

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1. Theories and methods

1.1 Political economy communication

To provide a heuristic examination of automated fact-checking issues, the research draws on theories concerning the political economy of communication, platform studies, and AI-based fact-checking.

Emerging at the end of the 1960s, the political economy of communication (PEC), which is often described as "critical," gives centrality "to the question of the power relations that structure the production, the dissemination, the reception of cultural and media texts" (Magis, 2016). In this perspective, Vincent Mosco (1996) highlights power relations in the analysis of the production, distribution and the exchange of resources. Indeed, most of the work on PEC focuses on the phenomena of imbalances and domination. Combined with social logic**,** which **"**Identifying long-term movements, encompassing production processes and production/consumption dynamics, or mechanisms shaping usage patterns." (Miège, 1989), the PEC makes it possible to better understand the dependence that may exist between fact-checking platforms and GAFAMs (Ndiaye et al., 2021) in a "context of information platformization" (Mercier, 2021).

1.2 Platform studies

The dynamics of "platformization" (*platform studies*) (Rebillard and Smyrnaios, 2019; Helmond, 2015) "marks the shift in the production and dissemination of information from a process of editorial choices to a demand-driven process in which content is continuously modulated and reassembled based on data collected about users and their practices" (Poell et al., 2018). Platformization is part of the logic of industrialization and commodification (Bullich, 2018). Thus, the recurring conflicts between press publishers and platforms like Facebook or Google News criticize the practices of both informational and commercial intermediation. It also appears that most of the work on intermediation/info mediation focuses on the downstream "Of the sectors within which they are integrated […] other phases of the production chain are frequently obliterated" (Bullich and Schmitt, 2019). Taking into account the upstream phase allows us to understand what is at stake and to assess the scope of the changes that "platformization" combined with AI is likely to induce in fact-checking practices. From a techno-semiotic point of view, platformization makes it possible to identify the modeling/homogenization of media formats (Rebillard and Smyrniaos, 2019), including those of fact checks.

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1.3 Fact checking's correlation with AI

Historically, fact-checking has been seen as a set of journalistic practices consisting of regularly verifying the veracity of statements made by politicians, public figures or, by extension, deciphering rumors circulating online [a technique also known as "*debunking*" or "rumor hunting"]. Today, the concept of *fact-checking* has "shifted to designate, no longer the exhaustive and systematic verification of journalistic content a *priori*, but the regular control of public quotes *a posteriori*" (Bigot, 2017). The practice of fact-checking has gained importance in the face of the spread of "fake news" and is gradually shifting to the periphery of journalism, increasingly carried out by actors external to the field of media (Cheruiyot and Conill, 2018). For computer science (CS), the object of *fact-checking* refers to artificial intelligence, which is only apparently new, its origins dating back to the work of Turing (1936). Better known by the acronym AI, popularized by John McCarthy (1956), it refers to the "ability of a functional unit to perform functions generally associated with human intelligence, such as reasoning and learning" (ISO 2382-28). Whether it's natural language processing or NLP[2] (Dufour, 2020; Enjalbert, 2005), or *machine learning*[3] (Sarker, 2021). AI applied to fact-checking through data quantification processes (Coddington 2015; Ferrer-Conill 2017), and algorithmic practices appear as […] a form of automated evaluation of veracity (Ciampaglia et al. 2015) contributing to forging imaginaries that are both dystopian and utopian (Dierickx, 2021). It is precisely these economic and techno-semiotic logic and the limits related to automatic fact-checking that are studied in this article.

1.4 Approach Utilizing Automated Fact-Checking Initiatives

When dealing with a phenomenon as complex as AI-based fact-checking, the qualitative exploratory approach seems to be more appropriate. Thus, a diptych approach is preferred, combining content analysis and distanced observation of two fact-checking platforms deployed in Africa.

The latter are chosen on the basis of two criteria: local anchoring and experimentation with automated fact-checking via smart tools. The fact-checking platform, Africa *Check*, considered as a pioneer in the field of fact-checking in Africa, created in South Africa in 2012, covers three other sub-Saharan countries (Senegal, Nigeria and Kenya). Its notoriety and partnerships with GAFAM make it a relevant program to study. The *Check4Decision*

[2] Using Artificial Intelligence to Model and Reproduce Humans' Language and Communication Abilities.
[3] Giving a computer program the ability to learn based on existing knowledge.

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research project, [4] launched in November 2019 by a consortium of four universities, three of which are Senegalese and one French[5] , is funded by the African Centre of Excellence in Mathematics, Computer Science and ICT (CEA-MITICS).[6] Its local dimension (centered on the Senegalese press) and its status as an experimental platform make it an interesting device to explore.

This study firstly focused on the analysis of the media and promotional content of these platforms, published within the scope of the web. Through the Google search engine, a dozen articles related to the launch of automated fact-checking projects or presenting the promoters serve as data. The analysis is also based on documents produced by the platforms and their partners. At the level of the *Africa Check* platform, the sections: "Fact Checks of the META program," "How we are funded," "Our impact," made it possible to better understand the economic and marketing logic. Subsequently, the approach was based on a distanced observation of the platforms over the period from July 2022 to August 2023. At this level, it was a question of identifying the fact-checking modules or functionalities, designated as being based on AI.

The experimental and evolving nature of automated fact-checking requires a broad view of the system. Indeed, for a heuristic consideration of the challenges related to automate fact-checking, social logic contributes to "unraveling highly intertwined situations, where issues of various natures overlap and compete." (Miége, op.cit.). Thus, various logic guided the analysis: power games, economic underpinnings, intelligent modules embedded in devices, experimental and training frameworks. A transversal approach that avoids limiting the analysis to the technical dimension and extends the reflection on the limits of automated fact-checking in an African context.

2. Fact-Checking: Logic, Dependency and limits

2.1 Economic Logic and Dependency

2.1.1 Africa Check as a pioneer

As a pioneer in the fact-checking domain, Africa Check has chosen to acquire the status of an independent non-profit organization rather than that of a press company. Despite this status, the program has strategic partners who contribute to the financing of its activities. The French version of the website was designed and developed by the *Agence Française de Presse* (AFP)

[4] A fact-checking platform funded by the African Centre of Excellence for Mathematics, Computer Science and ICT (CSE-MCSICT) https://www.ceamitic.sn ';https://check4decision.univ-thies.sn/

[5] Iba Der Thiam University of Thiès (UIDT), Assane SECK University of Ziguinchor (UASZ), Gaston Berger University of Saint-Louis (UGB) and University of Technology of Troyes (UTT).

[6] https://www.ceamitic.sn/

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Foundation with the support of the Open Society Initiative for West Africa (OSIWA). Africa Check is a member of the International Fact-Checking Network (IFCN), an entity of the Poynter Institute that "contributed to the institutionalization of the meta discourse around fact-checking" (Petters, 2020). Initiatives certified by the IFCN must comply with five principles: make available the sources used, explain the methodology used during the audits, adopt an explicit policy in case of error, be non-partisan, and set out the sources of financial revenue. The IFCN exists in large part thanks to the support of *Facebook* and the benevolent referencing of *Google* (IFCN, 2015). In the same vein, the financial resources of the *Africa Check* program come mainly from the GAFAM. In 2022, it has comfortable revenues[7] divided between the programs of the web giants, *Tri Facts*[8] and Meta (26%), *Bill and Melinda Gates Foundation* (15%), Google *(13%),* Luminate *(10%*[9]), Full Fact (3%). Indeed, *Africa Check*[10] collaborates with them through the *Google* News Initiative[11], the *Facebook* Third Party Fact-Checking Program[12] and the Meta Journalism Project[13].

2.1.2 Africa Check Collaboration With Google and Facebook

Accused of contributing to the decline of the press and allowing disinformation to proliferate, the search engine *"*Google has embarked on a vast overhaul of its 'News' with artificial intelligence" (BBC news, May 2018).[14] As a continuation of its Google *News Initiative* (GNI) program launched in 2016, the web giant has set up, for the media, a search engine specialized in verification, *Fact Check Explorer*[15], but also *Claim Review*[16] (jointly with *Bing*) to label verification articles to promote them, and *Google* Advanced Search. Google also has a specific program dedicated to AI, *Google AI Impact Challenge*, consisting of a call for projects to support the implementation of artificial intelligence techniques. *Africa Check* is one of the

[7] How We Are Funded | Africa Check
[8] Welcome to TRi Facts | TriFacts TRi Facts is the training, research and information center subsidiary of Africa Check, offering a range of fact-checking workshops, fact-checking and research and consultancy services focused on identifying and communicating facts.
[9] Luminate – About Luminate (luminategroup.com) a global philanthropic organization founded in 2018, by the Omidyar Group, created by philanthropists Pierre and Pam Omidyar. Pierre is the founder of eBay.
[10] Africa Check | Sorting facts from fakes
[11] Google News Initiative – Google News Initiative
[12] Facebook Third-Party Verification Program
[13] Discover the Meta Journalism Project (facebook.com)
[14] Google promises artificial intelligence for journalism - BBC News Africa published on 21 May 2018.
[15] Google Fact Check Tools - Google News Initiative
[16] The Claim Review Project (claimreviewproject.com)

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winners of the 2019 edition[17]. The program is coordinated by *Full Fact* and is supported by a grant of US$2 million over a three-year period.

Africa Check is also a partner in the Facebook *Third-Party Fact-Checking Program,* [18]aimed at the world's leading *fact-checkers to verify and then remove false information shared and/or reported by users (*Facebook, 2016). This program "aims to detect and address viral misinformation, especially obvious hoaxes that are not based on any facts (Bigot, 2019:122–123). [19] According to *Facebook,* this partnership has reduced the amount of fake news published on its pages by 80%.[20] As an extension, the *Meta Journalism Project*, "works with publishers around the world to strengthen the links between journalists and the audience they inform. It also helps address the key economic challenges facing the journalism sector."[21] Collaboration with Africa Check has enabled the verification of 127 facts and appears to have strengthened during the coronavirus pandemic with fact-checking on the WhatsApp platform.

This economic logic demonstrates that "in the field of AI, the media is once again making itself dependent" (Beckett, 2019). These partnerships thus confirm the supremacy of the GAFAM, in the field of online information, which has been largely highlighted by previous work, but also in fact-checking initiatives. What is most striking and seems paradoxical in this partnership logic is the fact that the GAFAMs, which greatly contribute to the proliferation of fake news, hold most of the technical knowledge around fact-checking and AI. Indeed, these sophisticated tools endorsed by internet giants either propagate a significant volume of misinformation or perpetuate power dynamics inherent in the development and dissemination of intelligent fact-checking tools, which may exacerbate imbalances. The *Check4Decision research project* funded by CEA-MTIC (African Centre of Excellence in Mathematics, Computer Science and ICT), which has received funding from the World Bank, seems for the moment to be less dependent on GAFAM. This program, which is supposed to intervene on fact-checking in the field of the Senegalese online press, seems to remain at an "experimental" level. In addition to being based on economic foundations, automated fact-checking initiatives in Africa also stem from the experimentation logic of intelligent tools developed by web giants with pedagogical aims.

[17] Africa Check among Google AI Impact winners - Africa Check
[18] Africa Check: sorting facts from fakes – Africa Center for Strategic Studies (africacenter.org)
[19] Verification of information on Facebook | Facebook Business Help Pages
[20] Africa Check: sorting facts from fakes – Africa Center for Strategic Studies (africacenter.org)
[21] Discover the Meta Journalism Project (facebook.com)

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2.2 Technical and Experimental Logic

2.2.1 Automatic verification versus Semi-automated verification

Automatic verification is based on the use of algorithms, natural language processing, or machine learning (Graves, 2018; Thorne and Vlachos, 2018). For its part, *Africa Check* has opted for a fact-checking strategy based on eight (8) steps[22] : (1) choose a claim to be verified, (2) accurately transcribe what was said, (3) search for evidence, (4) check archives as well as other sources, (5) discuss the evidence with experts, (6) write a report highlighting the evidence point by point and provide links, (6) conduct an independent internal investigation, (7) publish and (8) monitor comments. On closer inspection, two or even three of the steps seem to use automatic data: the choice of the fact to be verified, the search for evidence, and the verification of archives and sources. In terms of the evaluation methodology, the preferred verification process is not fully automated. As such, the fact-checking method can be considered semi-automated, as "automatic verification is more about checking information and delivering a verdict on its truthfulness." (Kolli et al., 2022).

However, as the 2019 winner of the *Google AI Impact Challenge*, *Africa Check* is supported in implementing "artificial intelligence techniques". But in practice, the initiatives are led by northern platforms, and are limited to experimenting with pre-designed tools and training modules. In fact, the web giant contributes, according to the brokerage model, to the development of intermediation activities at two levels: in professionalization, formatting and in correspondence with the market. For example, in the case *of Africa Check*, *Full Fact* provides coaching by Google's artificial intelligence experts. Through their technological offerings and the provision of key tools, The GAFAM operate within the frameworks of platformization and industrialization. (Bullich, 2018), thus accentuating technological dependence. For this reason, *Africa Check criticizes the fact that "technological solutions to problems have very often been developed in and for the North" and would like to ensure that the solutions developed correspond to Africa's needs (*Africa Check, 2019).[23] From an educational perspective, *Africa Check* offers "Guides" to Internet users in order to "spot images (photos or videos) generated by AI or to avoid false information on WhatsApp.

The educational dimension unfolds within an experimental perspective with the Check4Decision program.

[22] Africa Check: sorting facts from fakes – Africa Center for Strategic Studies (africacenter.org)
[23] Africa Check among Google AI Impact winners - Africa Check

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2.2.2 Check4Decision: A Pedagogical Experiment

The Check4Decision research project[24], developed in an academic setting, involves using artificial intelligence to promote the automation of fact-checking. The *Check4decision* platform is composed of five (5) modules: an intelligent crawler, an automatic classification module based on *machine learning*, a storage module, an indexing module and a dashboard. The extraction and classification modules seem to be the only ones that are based exclusively on AI. In this regard, the *intelligent* crawler *Crawler4Senegal* uses *machine learning* to localize relevant content[25]. It manages data acquisition from a 'seed' list of predefined sites with 145 online information sites.

However, the evaluation of the experimental device shows that the platform is more like a search engine on the online press in Senegal. Indeed, a generic search engine[26] is embedded in the system and contains more than 500,000 aggregated press articles[27], stored and then classified by category and theme, thanks to *machine learning*[28] techniques. The *fact-checking component appears marginal because the fact-checking sub-engine* presents 395 press articles already verified by *confirmed fact-checking*[29] in reality, the system is directly interfaced with specialized fact-checking reference platforms such as Africa Check, Factual AFP, etc. However, the sources include *non-fact-checking news sites such as* France 24, BBC news, ICI Radio Canada *and Senegalese portals such as Pressafrik and Seneweb.* [30] A plurality of sources that revealed a redundancy of information. For example, the *Crawler4Senegal*, through a modeling of the articles, has identified duplicates also called 'Frankenstein datasets' [31] to designate data assembled from several sources and which may contain duplicates.

At this stage of the analysis, it must be acknowledged that substantial efforts have been made in the search for a solution for automatic fact-checking. However, the use of smart technologies remains at the experimental stage for the time being, with a semi-automated process that certainly requires a degree of humanization.

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[24] https://check4decision.univ-thies.sn/
[25] A crawler is a robot (a computer algorithm) capable of crawling and indexing the web in order to map it. AI data crawlers autonomously explore the web in search of unstructured data.
[26] https://check4decision.univ-thies.sn/search/search-engine-home.php
[27] On the homepage, there are 111 sources and 248,687 articles as of 03-08-2021.
[28] A sub-search engine28 on regional coronavirus news showed 48,315 articles as of March 2021, but the data does not appear to have been updated since May 2020.
[29] https://check4decision.univ-thies.sn/search/fact-checking.php
[30] https://www.seneweb.com/
[31] Are artificial intelligence tools designed to fight Covid-19 ineffective? (actuia.com) August 11, 2021

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2.3 Limits of Automation Versus Humanization

Fact-checkers are aware of the limitations of their practices as much information becomes far too complex to be categorized as 'true' or 'false'. In principle, 'Human perception is no longer able to distinguish between truth and fake.' (Lloveria, 2022 The phenomenon of *deepfake*, a form of machine learning that exploits artificial neural networks [Giles 2018] capable of processing large samples of examples in order to mimic a person's facial, body and vocal expressions [Westerlund 2019] exacerbate its limitations of fact-checking. Combined with the *blockchain*, AI can be used to authenticate information with, for example, applications such as Truepic and Serelay used by the Wall Street Journal team to authenticate the images.

In a logical framework, *fact-checking* requires the existence of reliable and structured databases and digital resources [Goasdoué et al., 2013] and is based on the practices of *data journalism*. However, neither this type of data nor the associated techniques and practices are sufficiently established in the media environment in Africa [Kooli et al., 2022]. It is obvious that the 'tools that are used in Western countries are sometimes ineffective in the local cultural sphere' [*op, cit*]. Moreover, as Serres notes, 'These applications seem to push the human role in assessing reliability very far and introduce "meaning" into the machine' [2015]. However, the existence of algorithmic biases requires human intervention. Antonin Descampe and François Standaert demonstrate how easy it can be to deceive certain [classification] algorithms and invite journalists to be guarantors of 'algorithmic decisions' [2021]. This consensus on the need for a 'human in the loop' for AI systems 'is supposed to be a cure for several algorithmic ills: it would make it possible to detect algorithmic errors, make the algorithmic process "fairer", and contribute to better accountability of algorithmic decisions' [Maxwell, 2022]. We therefore recognize a form of humanization of verification that can only be beneficial in the search for truth [Diakhaté and Kouakou, 2021]. Nonetheless, it remains challenging for journalists to fully leverage these technologies, particularly when they are distanced from the environments where such applications are developed, and lack insight into the workings of algorithms and vast datasets.

Conclusion

This research posited that partnerships between GAFAM and fact-checking platforms in Africa were influenced by economic motives and domination issues. Additionally, it highlighted that the innovative processes introduced with AI further deepen technological dependency and have not yet achieved complete automation of fact-checking concerning local constraints and realities. The results of the exploratory study confirm these hypotheses. It appears that fact-checking "navigates between sales, marketing" (Nicey and

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Bigot, 2020) and platformization logic. The revenue generated from fact-checking practices by the GAFAM, along with their control over the design and deployment of intelligent tools, confirms their status as dominant giants in the online information platformization process. Bigot and Nicey consider that *Facebook* and *Google* "derive a benefit from their support for *fact-checking* that is both regulatory (in terms of compliance with institutional requests), symbolic (in terms of brand image) and economic (2020).

Regarding the automation of verification practices promoted by the giants, we agree with Graves (2018) that the search for a fully automatic solution remains a distant or even uncertain objective. In this regard, the analysis has shown that in the African context and "elsewhere" certainly, a "human in the loop" (Maxwell, 2022) seems to be necessary. Therefore, the recommendation of a human-machine approach arises. The solution, as suggested by Maxwell, may lie in recognizing that "humans and machines each retain their specificities and added value" in the fact-checking process. On another note, collaboration between actors (media, journalists, universities, users, computer scientists) could be a key factor in the innovative process. As Laurence Dierickx attests, "if automated productions do not meet the interest or expectations of journalists, regardless of the socio-cultural or organizational context in which the innovation is deployed, the project seems doomed to failure" (2021). Interviews with fact-checking *actors* could help to broaden the reflection.

The prospect of studying other platforms such as the *WhatsApp* seems to be emerging. Indeed, the coronavirus pandemic has "led *fact-checkers* to adopt this messaging app in their daily work in an attempt to establish a more direct channel of exchange with the public and a channel for the dissemination of verification also used in the circulation of rumors." WhatsApp, in partnership with the IFCN's Corona Virus Facts Alliance, has invested $1,500,000 to support fact-checking organizations fighting fake news[32].

In this regard, *Africa Check* announces a pilot project with the app, "What's Crap?"[33] The device identifies false information published on South African WhatsApp networks and sends verified information back in the form of an oral message[34]. This approach to spoken word is interesting for several reasons. Firstly, it acknowledges the cultural significance of oral traditions within African societies. Secondly, it has the potential to mitigate the "cultural" biases inherent in algorithms.

[32] Facebook's Investments in News Verification and Media Literacy
[33] What's Crap on WhatsApp? (whatscrap.africa)
[34] Africa Check: sorting facts from fakes – Africa Center for Strategic Studies (africacenter.org) published on 23-03-2021, accessed on 29 June 2023.

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