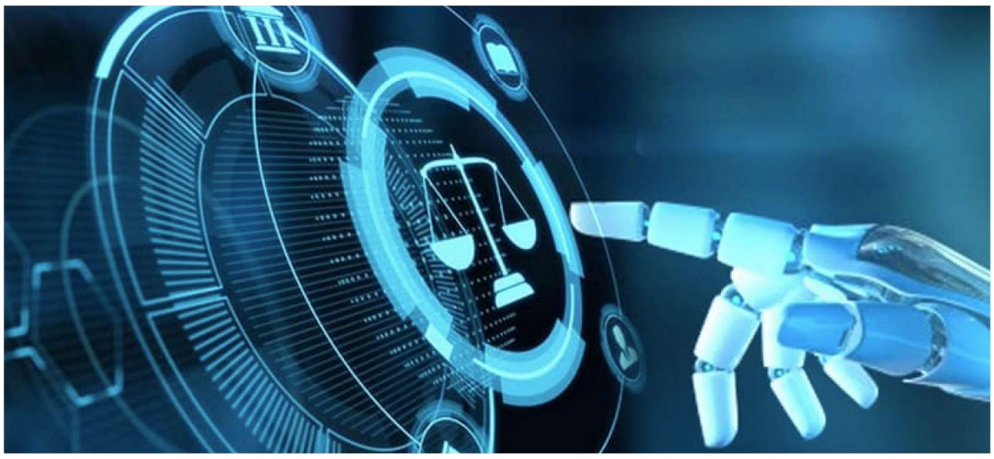
AI, Police and Justice

MODS212 – Ethical challenges and AI



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Abstract

According to a study published in 2019 by the World Justice Project, 41% of the countries are already using IA in their judicial system to increase the efficiency of case management and evidence gathering. For instance, facial recognition has been used in investigations in many countries, and, in some cases, allowed the identification of suspects.

The increasing use of AI in both the police and the justice system has become a major discussion and research. On one hand, the use of Artificial Intelligence has the potential to improve the efficiency of the justice system. On the other hand, it raises ethical concerns that require particular attention. This paper aims to explore the impact of AI on justice, in regulating crimes by exploring the positives, negatives aspects, and limits of its use. Our motivation to do so is motivated by the increasing clout of AI in justice and, consequently, to study its impact on society.

Indeed, the implementation of artificial intelligence in justice and in the police has the potential to decrease inequalities, biases, and discrimination, as we will see in this paper. However, it also raises concerns about the ethical implications of such a use regarding, among other things, transparency and privacy.

Introduction

Imagine a fairer and faster justice system using AI. Algorithms that forecast crime before it happens, investigations that rely on facial recognition to identify suspects. It sounds like a science fiction scenario. Yet, it is a steadily growing reality in society.

The use of AI in justice and police has stirred controversies for several years. AI implementations in the justice system, such as crime detection prediction and facial recognition, have the strong potential to enhance the effectiveness and even fairness of the justice system but could also endanger our privacy and increase discrimination. AI algorithms may also be subject to bias, which can negatively impact decisions made in the judicial system. For the sake of argument, studies have shown that some crime prediction algorithms have higher false positive rates for people of color, which can contribute to inequities in the justice system.

To legislate this use, the European Commission published an ethical charter regarding the use of IA in justice in 2018. This Charter provides a framework of principles to guide policymakers, lawyers, and legal professionals in managing the rapid development of AI in national judicial processes. Its implementation must be done in a responsible way in conformity with the fundamental rights guaranteed by the European Convention on Human Rights (ECHR) and the Council of Europe Convention for the protection of personal data. For the Commission, it is crucial to guarantee that AI remains a tool at the service of the general interest and that its use is done in respect of individual rights. The Commission has therefore identified the essential key principles to be complied with in the matter of AI and justice, for example, non-discrimination, quality and security, neutrality and intellectual integrity. In

addition to that, the General Data Protection Regulation (GDPR), has an application in the use of AI in police and justice. Indeed, it guarantees the protection of personal data and sets laws and rules for the collection, processing, and storage of personal data.

These laws and measures ensure that the European Union is careful regarding ethics and individual rights. Yet, it is crucial to acknowledge that these measures aren't sufficient to secure the responsible and ethical use of AI in court systems, police and justice.

This paper addresses the use of AI by law enforcement to make predictions of several kinds. Whether it is called predictive policing or risk assessment, the concerns of ethics, fairness and human rights are necessarily raised. In this context, we are willing to explore this question: What is the impact of AI in justice and the regulation of crime?

I. AI alongside the police

The integration of AI into policing has gained significant attention and raised debates in recent years. Law enforcement agencies around the world are exploring various ways in which AI can assist them in their daily operations, from analyzing crime data to conducting surveillance. While the use of AI in policing has the potential to increase efficiency and improve public safety, it also raises concerns about privacy and civil liberties and introduce ethical considerations that must be taken into account.

1. Support for day-to-day work

In this section, we will review the different aids that AI can provide in the daily work of police officers. Firstly, it can increase the efficiency of police reports. As an example, criminal-justice data in police narrative reports are currently difficult to be accessed and used by intelligence investigators in crime analysis (in part due to the large amount of text). AI and particularly machine learning techniques are able to automatically identify useful entities from police narrative reports making it easier to exploit and collect valuable information.

Furthermore, criminals often provide police officers with deceptive identities to mislead police investigations and AI can be a tool to defeat these mechanisms. Some systems have been developed to automatically detect deceptive criminal identities based on a taxonomy of misleading names, addresses, date of birth and social security numbers. This automated approach can help police officers identify deceptive criminal identities more efficiently and effectively, reducing the time and resources required to manually examine inexact matches.

In addition, some questions are raised about the contribution of AI within a police interrogation. It could help to compensate for the gender and racially-driven biases of police officers. AI can also be used to help formulate specific questions when interviewing suspects or to analyze responses and determine if they are consistent with evidence and testimony. Ideally, it may help promote the obtaining of non-coerced, voluntary confessions.

Finally, the questioning and reflection around "police robots" is increasing. The use of robots in law enforcement would allow for the limitations of humans and the shortage of manpower to be overcome by obtaining an "augmented" agent with exceptional abilities. Institutions and industries are constantly collaborating to produce what they call the "police of the future". Some artificial intelligences are already proving themselves as peacekeepers around the world. Boston Dynamics' robot dog has been integrated into the New York Police Department (NYPD) under the name Digidog. It is equipped with cameras, lights, and a two-way communication system. The NYPD deployed it in a hostage situation, where one of the two victims was able to escape from the apartment in question to raise the alarm. The robot entered and transmitted live video of the scene, confirming that the location was empty without putting the lives of the police officers in danger. Dubai's police force has also welcomed new members to its ranks, including a humanoid police robot capable of greeting and conversing in nine languages, detecting emotions on faces, recognizing hand gestures at a distance of 1.5 meters, and filming and transmitting live everything that happens. Equipped with a touch tablet inserted at its chest level, the robot allows for the settlement of fines, reporting of crimes, and contacting police forces in case of problems. The use of police robots is evolving in accordance with national and international legislation, including their criminal responsibility. Indeed, a new controversy is emerging around "killer robots". A combination of weapons and artificial intelligence capable of locking onto a target and making the decision, based on pre-programmed computer criteria, to fire without any human intervention. This perspective has sparked a lot of debate. How to legitimize the arming of robots? If this project were to become widespread, explainability would have a key role. Robots should be able to clearly explain the reasons that motivated their actions or decisions to ensure that they were justified and proportionate.

Personally, we share the public opinion, which is rather concerned about this prospect. The police already have biases and shortcomings that may be perpetuated in the behavior of robots. However, unlike uniformed officers, robots have limited reasoning abilities and cannot adapt to all situations that may arise. Police officers are sometimes faced with very delicate situations where the appropriate behavior to adopt cannot necessarily be determined in advance with observable criteria.

2. Criminal investigation tool

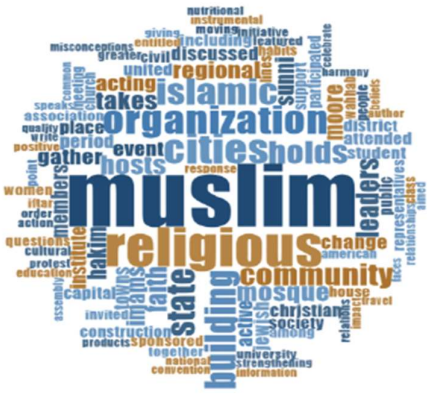
The large amount of cyber space activities and their anonymous nature make cybercrime investigation extremely difficult. A manual effort is largely
limited by the sheer amount of messages and constantly changing author IDs. By relying on some characteristics such as style markers, structural features or content-specific features, learning algorithms are able to build some useful models in order to identify authorship of illegal messages. This allows to automate the identity

tracing of cyber criminals through messages they post on the Internet.

Additionally, AI can be used to help analyze evidence and find patterns in criminal cases. For example, data analysis can help identify behavioral patterns that are often associated with certain criminal activities, such as money laundering, drug trafficking, or terrorism. For instance, in organized crimes such as narcotics trafficking, terrorism, gang-related crimes, and frauds, offenders often cooperate and form networks to carry out various illegal activities. And social network analysis has been recognized as an appropriate methodology to uncover previously unknown structural patterns from criminal networks.

The investigation may also relate to crimes within the police themselves. AI can be used to analyze data related to policing, such as arrest records, use of force incidents, and complaints filed against officers, in order to identify patterns of bias or discrimination. This can help law enforcement agencies to identify and address problematic behavior and improve their overall practices.

3. Internet surveillance



Word cloud of Islamophobia

Artificial intelligence (AI) can be utilized to detect crime on the Internet. It is a vast space that generates a massive amount of data. It is therefore a question of collecting and organizing the relevant one in order to detect potential security threats in real-time and focus on identifying criminal characteristics. Such profiling allows relevant protection and anticipating the various incidents by earlier detection of major attacks. In today's world, individuals, including cybercriminals, have become technically sophisticated and repeatedly expressing their emotions on the web, especially on popular social media or online forums. Some services, relying on tools such as natural language processing and machine learning algorithms, are able to analyze online conversations, clueing in police and city leaders to what hundreds of thousands of users are saying online. This analysis is more or less advanced ranging from the detection of keywords, the analysis of photo and video to more complex mechanisms allowing sentiment analysis.

However, the use of AI for crime detection on the Internet raises significant ethical concerns, including privacy and data protection. In French law, various laws are regulating this surveillance such as the Intelligence law from July 24, 2015 (*Loi relative au renseignement*). It establishes a framework within which intelligence services are authorized to use information access techniques. These techniques can only be used for purposes specifically enumerated in the bill, including national security, France's essential economic and scientific interests, and the prevention of terrorism. The techniques that most infringe on privacy are only used in accordance with the principles of proportionality and subsidiarity (a central authority can only perform tasks

that cannot be carried out at a lower level).

This law has nevertheless received many criticisms and has been questioned by multiple institutions and organizations. Some still perceive surveillance techniques as a damage to civil liberties. National security and crime regulation is a global concern that must be addressed for the good and maintenance of society. Consequently, the usefulness and purpose of the precedent methods are obviously not questioned. But the principle of proportionality requires that any action taken to detect crime must be proportional to the harm caused by the latter and must not result in unnecessary prejudice to individual rights and liberties. Therefore, the use of AI for crime detection must be carefully balanced against the right to privacy and other fundamental rights. For example, the use of AI to monitor social media and internet activity must be limited to specific areas and types of criminal activity, and any data collected must be used strictly for crime detection and prevention purposes. Moreover, any use of AI must be transparent, accountable, and subject to defined legal and ethical standards. We believe that under these conditions, the use of AI for Internet surveillance is totally proportionate and can only have a positive impact on society.

Thus, surveillance of criminal activities and police work assistance are a first step in the contribution of AI to the regulation of crimes but it can be pushed even further. AI can have a role to play in court decisions in order to try to make them more and more fair and adequate. It can also help to identify criminals, to put in place prevention policies adapted to the data collected or even, to predict future crimes. We will see that these applications are not exempt from ethical limitations and questioning either.

II. AI in Justice

1. The uses of AI in justice

Access to law, Online legal assistance

Ai has also a role to play in the access to law by providing online legal assistance to people.

Chatbots could be used to streamline access to various existing legal resources using natural language, without entirely replacing human intervention. In addition, templates for online documents, such as court motions, wills, purchase and sale contracts and lease agreements, could be generated automatically. These tools can help make access to justice easier and more affordable for everyone by reducing the costs and time associated with such procedures.

Predicting judicial outcomes

AI is able to help judges, lawyers but also stakeholders to choose the best strategy possible and to take more informed decisions by predicting judicial outcomes. Those predictions rely on mathematical models, database analysis, statistics, classification and machine learning.

For instance, lawyers can leverage AI predictions to determine if their clients should proceed with a case or opt for a settlement. In the same vein, by being given the defendant's likelihood of reoffending, judges can use these predictions to choose the right sentence: is a prison term necessary or will parole be enough? For the judges it’s a way to fight against recidivism. For the lawyers and their clients it’s a way to be sure that unnecessary or risky procedures are not initiated.

Judge and lawyer's assistance
In this context of helping the judges to make the best decisions possible and lawyers to give the best plea proposal, AI can also be a useful tool to analyze proofs such as videos, images and audio recordings by highlighting important information and showing the potential links between the different proofs.

In summary, these predictive justice tools are generally attributed with numerous benefits such as promoting alternative dispute resolution, relieving court congestion, legal predictability, and improving the efficiency and quality of justice.

2. The limits imposed by law

In these contexts AI can be really useful but we must keep in mind that it is far from being perfect. Linking AI and justice lead to some risks that should be taken into account before democratizing AI in justice.
That is why the CEPEJ (European Commission for the Efficiency of Justice) adopted in 2018, at the 31rst plenary meeting, the *European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and their environment.*
It reveals principles that should be respected if we want the AI to only have a positive and fair impact on justice:

1. **Principle of respect for fundamental rights:** ensure that the design and implementation of artificial intelligence tools and services are compatible with fundamental rights. Among others, these fundamental rights are the right to the access to a fair trial and the right to access to the judge.
2. **Principle of non-discrimination:** prevent the development or intensification of any discrimination between individuals or groups of individuals. To assure non-discrimination, we need to be sure that sensitive data (racial or ethnic origin, socio-economic background, political opinions, religious or philosophical beliefs, trade union membership, genetic data, biometric data, health-related data or data concerning sexual life or sexual orientation) are considered with the utmost care. If any kind of discrimination is detected in the development or implementation of the algorithms, it must be corrected otherwise this principle will not be respected and the algorithms will be biased.
3. **Principle of quality and security:** with regard to the processing of judicial decisions and data, use certified sources and intangible data with models elaborated in a multi-disciplinary manner, in a secure technological environment. Safeguard must exist to assure that all the sources are certified when it comes to machine learning using data but also to make regular feedback. To ensure the quality, all relevant expertise (lawyers, judges, scientists, researchers, sociologists, economists,...) should be consulted to obtain a comprehensive and qualitative system.
4. **Principle of transparency, impartiality and fairness:** make data processing methods accessible and understandable, authorize external audits. The risks of error must be clear and external parties should be able to

clearly understand the design process and make sure that it is unbiased.

5. **Principle "under user control":** ensure that users are informed actors and in control of the choices made. AI should not completely replace humans, especially concerning sensitive decisions that have a considerable impact on humans' lives.

Whether it is in the USA with federal laws, in Canada through a national strategy or in Australia, the use of AI in justice is regulated and has to face the public's reluctance.

We are aware of how useful AI can be in Justice. For example, the online legal assistance could make justice more fair by giving the possibility to everyone to have proper access to the same services. However in some cases, we are afraid of the scale that AI can take in Justice. For example, when it comes to predicting the outcomes of a trial, as it is almost impossible to build completely unbiased algorithms, we might imagine a judge being wrongly influenced by a prediction. And this could lead to unfair situations and sentences. We also believe that the human's control and overview asked by the European Ethical Charter are more than necessary and should be mandatory for every use of AI in Justice.

III. Prevention and crime predictions

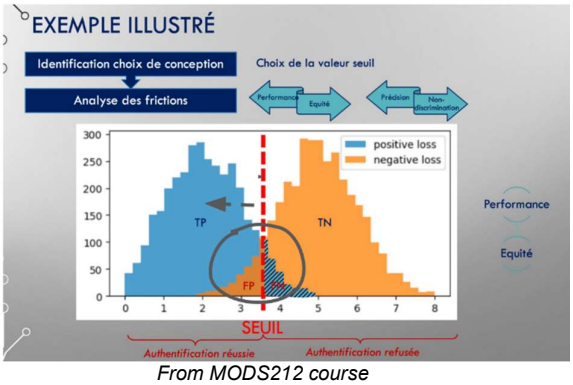
1. AI to prevent crimes

There are several examples where AI already plays a role in crime detection. In the financial world, AI can help identify and prevent fraud and money laundering. For decades, banks used transaction monitoring systems relying on predetermined binary rules, necessitating manual review of the output. However, the success rate of such systems is very poor, with only around 2% of flagged transactions being linked to criminal activity or malicious intent. By contrast, modern machine-learning solutions use predictive rules that automatically identify anomalies within data sets. By filtering out cases that were incorrectly flagged, while identifying those overlooked by conventional rules, these sophisticated algorithms can markedly decrease the number of false alerts.

Social media platforms also use AI to prevent people from posting offensive content. Indeed, when you post a photo or a video on Facebook or Instagram, an algorithm will review it to detect any sign of pornography or terrorist actions or offensive messages. It is way more efficient than before when people had to flag the post so that it was reviewed by a human who will determine if it was appropriate or not. The algorithm learns from a large dataset of pictures with labels saying whether or not it is appropriate content. Social media also uses AI to prevent hateful comments from being posted on the platforms. It knows which words are considered as insults, and it blocks the comments containing those words. The problem is that sometimes those words can be used without being insults but the algorithm will block them anyway. The algorithm cannot analyze the context in which the word is used.

In both cases, we prefer false positive rather than false negative. Indeed, we don't want to miss fraud and money laundering or the posting of pornographic or terrorist content. So, we want to minimize false negatives. To do so, we have to move the frontier to

the right on the picture above and by doing so, we have less discrimination but also less accuracy.



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Another issue is the processing of some personal data of the clients. Clients of the bank can be reluctant to grant access to their personal data for the processing of the algorithm used by banks. It is also the case with social media where people can feel that they are restricted in their actions when their comments are blocked inappropriately.

2. AI to predict crime

We can also imagine a world where artificial intelligence can predict any crime, including murders and terrorist attacks. Predicting a murder can seem a bit unrealistic for now because humans themselves cannot predict crimes, this would mean that artificial intelligence is superior to humans.
Nevertheless, the city of Paris is prepared to use artificial intelligence to predict terrorist attacks at the 2024 Olympic Games. The artificial intelligence will not use facial recognition nor biometric data to predict the risk of terrorist attack but will analyze crowd movements, unusual behavior or abandoned bags. If a problem is detected by the AI, it will alert the authorities. It is a way to facilitate the work of the policemen who have to watch the city cameras to detect unusual behavior.
Furthermore, this system will be also used in other events gathering a lot of people such as the Rugby World Cup that takes place this year in France.

Many people were opposed to the use of artificial intelligence to predict terrorist attacks. Some people stated that it would infringe on our liberties. We would always be watched and the government would always have a way to control us. Some people also were afraid of the bias of this artificial intelligence. Indeed, they were scared that there would be discrimination against some people and that only young Caucasian people from the same school would create this artificial intelligence.

To determine whether or not it would infringe upon the liberties of the citizen, the state had to do the proportionality test.
The proportionality test is a legal principle used to determine whether a government action or regulation that interferes with individual rights or freedoms is proportional to its intended goal or purpose.

In the case of the 2024 Olympic Games in Paris, three individual rights were at stake:

- Right to public security (protect against terrorist attacks)
- Right to protection of privacy
- Right to freedom of expression

So, the European Court of Justice imposed several conditions after doing the proportionality test: the videoprotection system would only be used during limited times where there is a high terrorist threat, there will be institutional oversight and there will be tests and human supervision.

We believe that AI may become a powerful tool to prevent and to predict crime. Indeed, AI can do some tasks much faster and much more accurately than humans. It facilitates the life of the people who have to review inappropriate content on social media platforms or identify anomalies in bank accounts. Also, the possibility of predicting terrorist attacks or murders seems appealing to save many lives. However, we are afraid of the possibility of discrimination. Indeed, the AI can be biased by the data it is training on or by its creator. Another issue is the infringement upon our individual liberties. Whether it is in videoprotection or in prevention of crimes, the AI will have access to many personal data and ways to monitor our life. So, we have to set some limits and to establish a regulation of the use of AI in prediction and prevention of crimes.

Conclusion

Thus, AI already plays a role in the police and the justice system. AI helps the police to make correlations between different crimes by analyzing many reports which would be too time consuming for a human. AI can also be seen through robots that are helping the police, whether it is a dog robot that explores a dangerous area or a human robot that can communicate with humans and help them. Another application of AI is through cybersecurity to detect some signature of the hacker and make correlations between different cyberattacks.
AI also plays a role in the justice system by providing online legal assistance to people. Moreover, AI can help in the court whether it is the judges to make the right decisions or lawyers to choose the best strategy. Nevertheless, some limits must be imposed on the use of AI in the justice system. Those limits were established by the European Commission for the Efficiency of Justice and are: the principle of respect for fundamental rights, the principle of non-discrimination, the principle of quality and security, the principle of transparency, impartiality and fairness and the principle “under user control”.
Finally, AI can be used to predict and prevent crimes. It can help to prevent online crimes such as money laundering or the posting of pornographic content on social media. In the near future, we can also imagine that AI will be capable of predicting murders or terrorist attacks. It will be the case at the 2024 Olympic Games that will take place in Paris where an AI will try to predict terrorist attacks. However, we also have to be careful that there is a regulation on the use of this AI, otherwise the country that is using it could become a place where each citizen's action is watched.

Perspectives and limits

As the use of IA in justice and police has seen a boom during the last decade, several prospects for the implementation of this technology in this sector.

One of the most prospective areas is the use of AI in the analysis of judicial data to forecast trial results. AI algorithms have already been developed to predict trial outcomes based on case characteristics and judicial precedents. A study conducted by the University of Cambridge reported that algorithms for the prediction of trial results have an accuracy of 79% for divorce cases, 82% for child custody

cases, and 86% for eviction cases. However, these algorithms must be used carefully, as the algorithm adapts to the training data, there is a non-negligible risk of overfitting (the data will be "too" adapted to the model used for training and therefore the prediction on new features will not necessarily be correct). Moreover, artificial intelligence should, and already does in some countries, facilitate access to legal procedures, notably via chatbots or online judicial assistance. This type of device could help those who do not have the resources to afford a lawyer.

Moreover, prisons are increasingly full. It makes it difficult for the penal system to offer them the rehabilitation programs they need to reintegrate into society after release. AI could fix this issue of overcrowding by determining an inmate's risk of recidivism, the AI could determine the most appropriate sentence for a particular inmate. Algorithms could be used to assess an offender's risk of reoffending and help determine whether a prison sentence is necessary or whether alternative measures might be more appropriate, such as community service, rehabilitation programs, or electronic monitoring. Algorithms have already been developed for this purpose, but for the moment, the results are too imprecise and biased to be definitively implemented.

The use of AI is expected to continue to grow in this sector. A report from Research And Markets has shown that in 2026 the AI legal market will account for $1.5 billion. However, this growth must be accompanied by a strong ethical framework and solid regulation. It is therefore essential to ensure that AI is implemented with accountability, transparency, and fairness. These demands require strong links and collaboration between legal experts, engineers, and social scientists. It also requires a process of verification to detect potential biases and correct the errors in the system.

The most predominant limitation and ethical threat to this use is the potential for bias and discrimination that such use may involve. It is crucial that the decisions made by a system of this type are fair and impartial. Criticism of the increasing use of AI in justice and law enforcement points to the fact that these AIs could reproduce human biases leading to discriminatory decision-making. For that matter, a Harvard Business Review report revealed that AI systems used to predict recidivism tend to be more discriminatory against black defenders than white ones. Likewise, an AI system used by the NYPD to predict the likelihood of a person committing a crime in the future also showed biases toward racial and ethnic minorities. These biases raise concerns about how AI systems could further perpetuate pre-existing inequalities in the criminal justice system. The use of this technology also raises the question of liability in case of judicial errors.

Therefore the use of AI in the executive and judicial system has already proved itself and has very promising prospects. But the different implementations and developments must be thoroughly studied and regulated so as not to have the opposite of the expected effect.

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