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The human rights cost of introducing data-driven practices in law enforcement

ALEXANDRA FRATRIČ

Author:

Alexandra Fratrič

Proofreading:

Matúš Jevčák
Marián Maraffko
Michaela Ružičková

Expert Supervisor

Pavlína Pavlová

THE HUMAN RIGHTS COST OF INTRODUCING DATA-DRIVEN PRACTICES IN LAW ENFORCEMENT

Alexandra Fratrič

Abstract

Advanced data-driven law enforcement practices such as intelligence-led and predictive policing are being introduced with a promise of more effective policing with improved analytics of large volumes of criminal justice-related data. But their autonomous predictions can pose a significant threat for individuals and communities alike, especially if deployed without adequate supervision and guarantees that eliminate potential errors and biases. The outlined case studies of their deployment in Europe, including CAS, Top600, Sensing Project, DELIA, or Pro-Kid 12-, highlight the risk of exacerbating pre-existent discrimination, ethnic profiling, and further harassment for individuals and communities that already experience excessive and ineffective policing. The human rights impacts are particularly relevant for countries with distinct minority and marginalised communities, such as Slovakia, where Roma communities and law enforcement have a historically problematic relationship.

Keywords

law enforcement; human rights; predictive policing; algorithm; surveillance

THE PROS AND CONS OF AUTOMATED POLICING TOOLS

The growing availability of a large quantity of data and advancements in analytical and algorithmic tools have contributed to the rapid development of data-driven technology over the last decade. Systems using automated or algorithmic decision-making nowadays impact virtually every field – from business processes such as production, logistics, marketing, sales, and recruitment to public services including welfare and social programmes, health care, mobility, and education (Purdy & Daugherty, 2017). Law enforcement is yet another area with the promise of reaching higher efficiency with the implementation of automated technology. This should not come as a surprise, given that police have for long used historical data about crimes and specific locations to recognise criminal patterns and predict likely violations. Advanced technology now enables state agencies to automatise these processes (McDaniel & Pease, 2021).

Law enforcement across Europe has gradually increased the sophistication of data practices to profile people, assess the likelihood to commit crimes, predict potential recidivism, or identify suspects (Kennedy et al., 2011; Hoijtink & Leese, 2019; Malek, 2008). Advocates for automated solutions highlight their benefits, such as the improved analytics of sizable criminal justice-related data, the possibility to predict probable suspects and victims based on location and associations, prevention of crimes through movement analysis, and recognition of crimes in progress resulting in overall increased efficiency of law enforcement and hence a safer environment (Rigano, 2018). Others, however, emphasise their numerous shortcomings. The failings mainly stem from the automatization of processes with minimal or insufficient human supervision, lack of transparency and accountability of such systems and their learning models, and their potential to violate a range of human rights, pre-eminently the right to privacy and non-discrimination (Ferris, Min, Nayak-Oliver, 2021).

Automated policing tools have significant variations – depending on their data sources, analytical methods, and focus on providing specific outputs and predictions (Strikwerda, 2021). Predictive policing uses past crime data, information about the local environment, and other intelligence to identify "hot spots" as well as usual times and conditions when offences are committed with the goal to prevent them from happening. This method is relied on to predict where and when the next crime can be expected and should help law enforcement with resource allocation. In comparison to predictive policing, which focuses on a specific geographical location, the goal of intelligence-led policing (also referred to as predictive identification) is to predict and assess the likelihood of specific individuals to commit a crime or become a victim. Information already available to police and state agencies such as criminal records, domestic disturbances, traffic stops, or arrests is analysed to profile future offenders – they are consequently targeted on an individual basis with the aim to prevent them from committing crimes (Ferris, Min, Nayak-Oliver, 2021).

DATA-DRIVE LAW ENFORCEMENT IN EUROPE

Intelligence-led policing, predictive policing and other autonomous prediction-making systems pose a significant threat for citizens. Their adoption has already led to discriminatory practices in several cases recorded in Europe. For instance, the Crime Anticipation System (CAS) used in the Netherlands is a geographic crime prediction system, which tries to predict where (hot spot) and when (hot time) a crime might take place. Initially implemented in 2014 as a pilot project in Amsterdam, the system was later rolled out nationwide. The central crime database (BVI) feeds CAS information gathered by the police within the last three years on previous crimes, identified criminals, and targeted locations. Socio-economic information from the Bureau of Statistics focuses on features such as age, income level, and social benefits within a specific area. The Municipal Administration provides street names and addresses. The terrain is divided into equally large squares (125m x 125m). In the first step, machine learning algorithms learn to recognise patterns in provided training data sets. In the second step, the system makes actual predictions. The higher the risk of crime, the more saturated the colour of a particular square on the map.

According to Dutch officials, CAS is a tool for allocating manpower more efficiently by anticipating crimes in specific locations. But international watchdogs including Amnesty International (2020b) claim there is no evidence of the system's effectiveness. CAS predictions are based on three data sources, and a closer examination of the applied data sets indicates several problematic issues. The information used in the crime predictions in a specific zip area comprise sensitive socio-demographic indicators, for instance, the number of people living in one household, the number of households with only one parent, average property value, number of social benefits recipients, fiscal monthly income, and, until 2017, also the number of non-Western individuals with at least one foreign-born parent (van Brakel, 2016). Such design assumes the existence of a correlation between crimes and specific socio-economic factors or ethnicities.

Even though the "non-Western" indicator was officially phased out, studies show that it is still possible to classify race-ethnic origins of groups within a geographic area based on proxy indicators. Despite individual identifiers not being taken into account, ethnic belonging and space are frequently linked (Egbert & Leese, 2020). Deployment of a system executing analytics on the selected criteria thus brings a significant risk of ethnic profiling and discrimination (Driessen et al., 2014). The normalisation of pre-criminality interactions and undertaking preventive measures such as controls or body searches in the areas that were flagged as "high risk" solely on past criminal records and socio-economic indicators violate the presumption of innocence, protection of personal data, and the right to equal treatment and non-discrimination based on age, race, status, or income (Chander, 2020).

The Dutch police have also implemented other problematic law enforcement initiatives based on automated predictions. Unlike CAS, which focuses on mapping and area assessment, the Top600 project is aimed at identifying 600 individuals over the age of 16 with the highest likelihood of committing a "high impact crime" in the future. The predictions consider if an individual was arrested in the last five years, if one has been

presented to a bankruptcy judge, or if one encountered public prosecution service, among others. Once a person is ranked as "high risk" and put on the Top600 list, they face an array of possible penalties – their residence permit can be revoked, they can undergo arbitrary police checks and regular house searches, or their families can be randomly visited by the officials. If the system identifies an individual among Top600, they are likely to be arrested and interrogated if a crime is committed in their area, leading to their reinforced position in the list and creating a perpetual cycle with limited possibility of getting off the list.

Another automated risk assessment method employed by the Dutch police is called the Sensing Project. Cameras are used to monitor movement and collect information about vehicles to calculate the risk that the specific vehicle owner might commit a crime. One criterion used by the prediction models is if the car has an Eastern European licence plate. If one is assessed as "high risk", the vehicle is stopped, and the driver checked for identification. A special focus also lies on the so-called "mobile banditry", defined as pickpocketing and shoplifting committed specifically by people from Eastern European countries, which primarily targets the Roma minority and results in ethnic profiling (Amnesty International, 2020a, Amnesty International, 2020b). Italian project DELIA takes the automated predictions further by forecasting the place where the future crime will happen and also the individual who will commit it. The system used information such as age, skin, hair, eye colour, and accent, together with data from surveillance cameras and police records. The ethnicity of the potential perpetrator is marked as an important indicator (Cinelli, 2020; Ferris et al., 2021).

Algorithms are not applied only to the adult population. An automated police system in the Netherlands called "Pro-Kid 12-" assesses the risk of children between 0-12 years of being involved in a crime (Dechesneet al., 2021). The child obtains a risk score based on their home address, age, gender, and criminal history of their parents and other people living in the same household. As a result, high-risk children, who are mostly from economically marginalised or other excluded communities, can be removed from their families. When the Dutch Ministry of Security and Justice commissioned an evaluation of the prediction Pro-Kid 12- system, only 1,542 of the 2,444 assessments were found to be correct (Ferris, et al., 2021), putting into question the overall precision and usefulness of such technology.

Automated prediction-making systems such as Top600, Sensing Project, DELIA, or Pro-Kid 12- can have negative effects on the targeted individuals and increase their feelings of animosity and mistrust towards the police and state officials (Patrick & Kind, 2019). Moreover, disproportionally focusing on specific people or groups leads to further stigmatisation, which can result in the so-called "self-fulfilling prophecy", when the targeted individuals start engaging in criminal activities and behaviours (van Brakel, 2016). As the Pro-Kid 12- project demonstrates, algorithms may come to an incorrect conclusion based on the data it is provided. However, as the technology is perceived as "autonomous", and many argue that it is, therefore, objective, the attribution of decisions made by such systems technology is challenging.

Algorithmic systems are vulnerable to manipulation and bias at every stage of their use – from how they learn, what they learn from, how the data is labelled, what groups of data are

being considered, and how they operate. Data sets used for machine-learning training can reproduce and reinforce discrimination based on socio-economic status and ethnic background, which is already existing in society. Minorities and individuals from underserved communities have a significantly higher chance of being checked and subsequently prosecuted (Kutnowski, 2017; Egbert & Leese, 2020). Not only is there a possibility that the data provided by the police is already initially biased due to increased targeting of specific geographical locations or minorities, but further bias can be introduced into the system in the way the data is selected and labelled. Input information can be effectively influenced by subjective decisions and perceptions about what kind of places and people seem to be "suspicious" or "dangerous" (Sandhu & Fussey, 2021). Personal prejudices and systemic discrimination can lead to legitimising profiling and embedding discrimination in a feedback loop. Predictions can show an increased probability of crimes in a specific area, resulting in more police officers being assigned to the location. Consequently, the increased checks can provoke more reactions if the policing is not adequately sensitised, or a petty crime is recorded in higher numbers. As a result, the newly collected data fed into the system reinforces the assessment that this specific region is "unsafe".

The dynamic advancement of the algorithm through autonomous machine learning additionally carries the "black box" problem which can produce self-reinforcing bias that becomes increasingly difficult, or even impossible, to trace and correct (Asaro, 2019). The use of automated techniques also exacerbates accountability problems. Popular algorithmic learning models are conducted through largely self-directed processes that are difficult to interpret. Errors and conscious or unconscious prejudices can go unnoticed with limited transparency and culpability. This creates a significant risk of reproducing existing prejudices and perpetuating social inequalities and the stigmatisation of certain groups. The problem is aggravated by automation bias, or the predisposition of human decision-makers to assume that decisions rendered by technology are more neutral and objective than decisions made by humans, introducing additional issues that are difficult to identify or correct (OSCE, 2021a).

AUTOMATED PREDICTION IN LAW ENFORCEMENT IN SLOVAKIA

The potential violations of human rights present in the above-mentioned examples bear relevance for Slovakia as automated analysis and decision-making in law enforcement processes have been debated by state authorities (MINV, 2021a, MINV, 2021b, OSCE, 2021b). A distinct minority group most at risk of discrimination if predictive tools are being deployed are Roma. Throughout Europe, Roma face a number challenges in their interactions with law enforcement agencies, such as ethnic profiling, disproportionate or excessive use of force by the police, and police failure to respond effectively to Roma victims of crime, hate crime and racist violence. Furthermore, the relationship between police and Roma communities suffers from deep mistrust (OSCE, 2016).

With around 500,000 (9% of the population), Slovakia has one of the largest Roma communities in Europe (European Commission). Persistent stereotyping, prejudices, stigmatisation, and discrimination in society and on a state level, together with disproportionate use of police force against Romani people, have been well documented (Amnesty International, 2021; EU Observer, 2020; Rorke, 2016; Jenčová, 2022). Members of the Roma minority have been further exposed to increased policing and police violence during the pandemic (ODIHR, 2020). Due to the pre-existing societal biases, discriminatory practices can be further amplified when deploying algorithms for automated prediction and decision-making in law enforcement processes. As demonstrated by the case studies, marginalised communities can be targeted despite the systems being declared not to use ethnical bias and this is not only on a community level but also on an individual basis.

Romani communities already experience over-policing, often because of racial profiling practices based on stereotypes of so-called "Roma criminality." This leads to Roma people being targeted for disproportionate law enforcement activity including stopping, searching, and document checks on little or no legal grounds (Fair Trials, 2021). The historic over-policing can be also aggravated by state compilation and use of registries and data banks specifically focused on Romani ethnicity, such as the example of the police registration of Roma in Sweden. These databases often record details of members of the Roma community regardless of whether they are of criminal interest and they have been found to be inaccurate (CRD, 2016). Feeding the algorithms biased police data can lead to automated predictions potentially being used to legitimise problematic interventions, surveillance, body searches, or unwarranted stops of Romani individuals.

Other socio-economic data such as fiscal monthly income, average property value, the number of people living in one household, or the number of social benefits recipients to identify high-risk zones will inevitably lead to increased targeting of Romani people. The Roma population in Slovakia is diverse, yet often similarly affected in terms of poverty, social exclusion, and vulnerability (USVRK, 2021). Approximately a third of Roma communities in Slovakia live in settlements that are spatially segregated, a determinant that has an enormous impact on poverty. For example, almost half of the Roma households in Slovakia declare themselves as unemployed (48%) which is the highest number in the region, compared to 32% in Czechia and 23% in Hungary. Hence, feeding the systems socio-economic data would inevitably lead to targeting Romani people and even shut down public debate about the ethics of such practices altogether as many perceive algorithms as completely "objective" (Shapiro, 2017).

RECOMMENDATIONS

While posing as neutral, independent of bias, and objective in its fight against crime and offending behaviour, law enforcement using data-driven technology with autonomous decision-making negatively impacts minority populations and marginalised communities across Europe (ENAR, 2019). In countries such as Slovakia, with an ethnic minority that has faced stereotyping and persecution and has a history of discriminating treatment by the

police, such technology could be hardly used without perpetuating stereotypes and bias or justifying discriminatory policing. Should there be any case of their use, it will have to include robust safeguard mechanisms.

States should adopt adequate legislative and other necessary measures to ensure that law enforcement agencies act consistently with human rights principles and norms and ensure the human rights compliance and the ethical governance of automated systems. This includes guaranteeing assessments of their community and human rights impact with piloting and evaluation preceding the introduction of new systems to assure their neutrality on protected personal grounds such as ethnicity. The police force needs to be trained to interpret and use automated predictions in a wider context and to detect possible prejudices and biases. Officers working with autonomous technologies must be adequately trained and sensitised to potential bias and the implications of erroneous risk identification for the people concerned (OSCE, 2021a).

It is equally necessary that the authorities adopt measures to warrant an effective oversight, accountability, and due diligence of the use of tools by police. This is to ensure they are not producing discriminatory results or being used with a discriminatory impact on communities and individuals. Such steps include considering the needs of marginalised groups when designing, piloting, and implementing technology as well as encouraging participation of these groups during the consultation process. Roma people and other affected communities should be encouraged to take part in programmes on prevention and response to ethnic biases derived from autonomous decision-making. They should also be meaningfully included in consulting designing and implementing technology that can have an impact on their human rights and consequently security. Whether in policing or other fields employing algorithmic decisions, standards and processes must be considered in terms of the communities they impact, particularly for those who are disproportionately affected by these decisions. The aim of law enforcement is to protect citizens by minimising the harm they are facing. This must be done with fairness, equity, dignity, and security as the overarching values behind their technology and processes.

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