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Building the case for restricted use of predictive policing tools in India

Abstract:

The use of predictive policing by law enforcement agencies has lately proliferated across several states in India. Predictive policing uses machine learning models to analyse substantial amounts of crime data to map and predict crimes, offenders, identities of the perpetrators and victims of crime. The aim is to enable the efficient allocation of limited resources at the disposal of law enforcement agencies for crime prevention. However, evidence suggests that predictive policing, in its current form, suffers from serious limitations. Inferior quality datasets are being used to train algorithms and citizens are unable to contest inaccurate algorithmic outcomes that could lead to their preventive detentions, often to the detriment of criminal justice norms and constitutional fundamental rights of citizens. More importantly, in the absence of oversight mechanisms restricting its use, the use of predictive policing has ended up reinforcing and amplifying police biases in law enforcement. This paper focuses, in particular, on the many ways in which predictive policing increases the risk of preventive detentions under section 151 of the Code of Criminal Procedure (CrPC), 1973 and proposes recommendations to preclude possibilities of unlawful preventive detentions using predictive policing tools. In part 1, the paper reviews the practice of preventive detention of potential offenders by the police in India—under section 151 of the CrPC. In part 2, I build the case for restricted use of predictive policing tools to only predict the location, type and time of the crime and not potential offenders or victims. In the last part, I recommend substantive measures and procedural safeguards to secure the reliable and accountable use of place-based predictive policing tools in India.

Keywords: Preventive detention; algorithmic outcomes; criminal justice norms; marginalised communities; restricted use

Agenda:

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Introduction

The use of predictive policing tools has lately proliferated across several states in India to support efforts by law enforcement agencies for efficient allocation of limited patrolling resources, improvement in crime prevention strategies and enhancement in community safety (CSDS, 2018). About 19 states in India are either through or in the process of operationalizing these tools. Predictive policing tools use machine learning models to statistically analyse large datasets including past criminal records, satellite images, etc., to map, predict and identify—crimes, offenders, and victims of crime (2013). But, serious structural and technical limitations of these tools exacerbate risks to the constitutional fundamental rights of citizens often to the detriment of criminal justice norms. The paper focuses on precluding the possibility of unlawful preventive detentions using predictive policing tools. In part 1, the author reviews the practice of preventive detention of potential offenders by the police in India—under section 151 of the Code of Criminal Procedure (CrPC). In part 2, the author builds the case for restricted use of predictive policing tools to only predict the location, type and time of the crime and not potential offenders or victims. In the last part, the author proposes substantive measures and procedural safeguards to secure reliable and accountable use of place-based predictive policing tools.

Critical appraisal of preventive detention in India

The Bureau of Police Research and Development's model police manual asserts that crime prevention is a central part of police duties and that it must take precedence over crime detection. This stipulation is based on a long-standing, widely recognized criminal law principle that maintains that "crime prevention saves lives and money and investing in crime prevention is better than investing in punishment" (UNODC). Preventive detention is one of the several key approaches adopted for crime prevention. The Indian Constitution empowers the Central and State legislatures to pass laws on preventive detention under entry 9 of List I and entry 3 of List III of the Seventh Schedule to maintain security, public order and maintenance of services essential to the community. Section 151 of CrPC permits police officials 'knowing of a design' to preventively detain 'person so designing' without orders from a Magistrate or a warrant, (a) 'if it appears to such officer', the commission of a cognizable offence cannot be prevented otherwise, (b) for a period not longer than twenty-four hours unless required within the law. It is intended to be a precautionary measure to increase community safety and not a punitive measure.

Unfortunately, 'knowing of a design' and 'if it appears to such officer' grants extensive powers and flexibility to officials, and has often been misused to detain citizens (2017), by contravening not just the fundamental right to life, personal liberty, and to move freely throughout India guaranteed under Articles 21, 22 and 19 (d) of the Indian Constitution but also the spirit and intent behind Section 151. Detentions and arrests made by the police have disproportionately and unfairly targeted marginalized sections of the Indian society and political dissidents. For instance, citizens from Adivasi, Dalit and Muslim communities make up most of the undertrial prison population. The Kuravans, a scheduled caste community in Tamil Nadu, are kept under illegal detentions and are forced to provide false confessions through brutal force by police. The entire community lives in the fear of arbitrary detention and arrest (Singh, 2018). This continued victimisation of minorities is not reflective of their tendency to commit crimes but, police officials using their discretion and inflicting their tainted understanding of 'criminality' on them (Završnik, 2020) thereby also violating citizens' right to equality guaranteed under Article 14.

In other words, the police have been granted wide discretionary powers using which they can arrest or detain any citizen who they suspect to be a potential offender. The Madras High Court in A.V. Bellarmin v. Mr V. Santhakumaran Nair, 2015, outlined the existence of three types of subjective biases that influence the discretion of police officials while detaining or arresting, a) pecuniary bias relating to monetary incentives, b) personal bias relating to own motives and c) official bias relating to authority. Accused's past conduct or previous criminal records might seem intuitively relevant to future behaviour, but it may not be connected to the offence itself and taints decision making of the official by stimulating personal bias at the very outset along with the risk of cognitive errors vis-à-vis understanding of recidivism (Chen, 2013). Moreover, repeated

stigmatisation and checks of offenders become impediments to their socialisation and can even lead to relapse in the criminal tendencies. It could potentially lead to a self-fulfilling prophecy (Kimberly, 2019).

While the courts consider these extensive powers necessary to maintain public safety, they have been compelled to instate conditionalities for safeguarding the freedom and liberty of citizens, and preventing the grave misuse of Section 151. They have emphasised time and again that these safeguards are embedded within Section 151, and are inherent to Article 21 and 22(1). In addition, the Supreme Court of India in Joginder Kumar v. the State of U.P. stated that reasonable justification for detention cannot be based on arbitrary criteria. The Kerala High Court recently in 2021 elaborated on the jurisdiction of suspicion for preventive detention and reasonable satisfaction in Waheeda Ashraf vs The Union Of India. It stated that the detaining authority has to place all information, facts and material before the court to make the case for the legality of detention and conformity with mandatory provisions of the existing laws when presented with a habeas corpus petition to challenge the detention order. Moreover, the principles of Fair Trial require the detainee to be given adequate opportunity to contest the detention order. Under Article 22(5) of the Constitution, the detainee has to be provided grounds for detention by the detaining authority to build and present their case against the order. Consequently, the reasonable justification, subjective satisfaction and supply of reasons provide legitimacy to the action of depriving a citizen of personal liberty or arresting them.

Impact of predictive policing on prevention detention practices in India

Predictive policing tools harness advancements in computational power and large datasets to bolster crime prevention strategies adopted by police officials. Place-based predictive policing relies on pre-existing crime data to find correlations and patterns in the data, and predict places and times with high-risk factors, which leads to increased deployment of police resources and surveillance in identified regions. Person-based predictive policing relies on risk factors including past arrests or victimisation patterns to draw correlations and patterns to predict identities of potential criminals or victims (Lau, 2020) which leads to an increase in home visits of potential offenders.

Such tools in India are being used to determine environmental conditions, including locations, that create opportunities for committing crimes; identify risk to nearby locations and people after the initial crime; crime patterns and hot clusters; and faces of potential offenders using Facial Recognition Technology (FRT). While these tools are touted to be objective, accurate and efficient, in their current form, they suffer from serious limitations. States in the USA like California (2020) and Santa Cruz (2020), which were forerunners in deploying these modern tools, have either banned them or restricted their usage. The UN High Commissioner for Human Rights, Michelle Bachelet in September 2021 had stressed putting a moratorium on Artificial Intelligence systems that pose a high risk to human rights including automated decision-making systems and profiling until adequate safeguards are enacted. The following reasons delineate the risks of the unrestricted usage of these tools.

Pitfalls in data quality amplify risk for biased and unlawful preventive detention

Crime record datasets being fed into the algorithms are incomplete and biased (Marda and Narayan, 2020). National Crime Records Bureau (NCRB)'s Crime in India report is the only official source of crime data in India. An expert committee under the Ministry of Statistics and Programme Implementation (2012) had noted significant under-reporting of crimes in the NCRB report as it follows the 'principal offence rule' or the most heinous crime with maximum punishment is recorded. For instance, a case of murder and rape will only be counted as a case of murder i.e. principal offence. This omission within training data would severely impact the accuracy of a model that aims to predict rape due to the unavailability of data on the crime, and in a model that aims to predict multiple types of crime with an increased propensity of murder as compared to rape or snatching. A situation similar to the first example surfaced with the deployment of FRT software of Amazon's

Rekognition, Microsoft Azure's Face, Face++ and FaceX in India, wherein the omission of faces of Indian women in the training dataset resulted in the inaccurate identification of them (Mehrotra, 2021).

Crime records also capture inherent and institutional biases in policing attitudes, and practices (Bokil, 2021). For instance, in the absence of standard operating protocols (SOPs) for capturing real-time data from police helplines for Delhi's Crime Mapping Analytics and Predictive System, the data collection practises ended up perpetuating biases. Calls coming from organised colonies were taken seriously and granular information was recorded, while calls from marginalised areas were marked on the jurisdictional police station or the entire settlement, delineating the entire area as a criminal hotspot based on the discretion of police analysts. Moreover, the Centre admitted that the FRT software used by Delhi Police to identify missing children had an accuracy of only 2% in 2018 (Press Trust of India, 2018) and fell to less than 1% in 2019 (Press Trust of India, 2019). These incomplete and bias-laden crime datasets render the resulting prediction outcomes unreliable and inaccurate, thereby inhibiting police officials from making error-free or objective decisions for detaining citizens. Moreover, it will also lead to disproportionate allocation of limited police resources in, say, migrant colonies and minority settlements based on tainted and prejudiced evidence.

Inability of detainees to contest preventive detention orders based on algorithmic outcomes

Predictive policing tools are made up of complex, black-box systems wherein explainability of outcomes remains an elusive task. The algorithms exemplify correlations, and not causations, between variables. For instance, it can assign a high-risk score for Ram to commit a crime in North Delhi at noon but cannot explain the reasons for the high-risk score. Thus, limiting the capacity of police officials in providing a legitimate supply of reasons to Ram for his detention order or to the Magistrate for detaining Ram. This will significantly impact the detainee's right to contest the preventive detention order.

Moreover, the Indian Evidence Act, 1872 has not assigned any clear evidentiary value to such algorithms. This limits the detainee from presenting algorithmic outcomes as evidence to effectively challenge the veracity of the outcome and the preventive detention order issued on its basis. Sections 65A and 65B of the act deals with electronic records including emails and phone recordings, but sophisticated algorithms that make predictive policing tools are a different issue (Jauhar, 2021). The right to examine and contest the veracity of outcomes should also encompass the right to assess the basis of risk-scoring methodology and data used to build the model. Currently, the Right to Information Act, 2005 strategically exempts disclosures from law enforcement agencies to preserve the 'security interests' of the state (Babele, 2021).

Violation of citizens' fundamental right to privacy

Person based predictive policing tools categorically require Personally Identifiable Information (PII) including names, images, addresses, sexuality, caste, identifying marks on the body and so on for predicting a potential offender. In the landmark judgement, Justice K. S. Puttaswamy (Retd.) and Anr. v Union Of India And Ors. in 2017, the Supreme Court of India conceded that the collection of demographic or biometric data stored by state agencies requires greater scrutiny under the test of proportionality against the legitimate aims that ought to be achieved. In addition to failing the test of proportionality, the use of such tools also fails the test of legality as it lacks a statutory basis (2019). Moreover, the data is also being collected and analysed without the knowledge or consent of the citizens.

In addition, person-based predictive policing prescribes officials to conduct domiciliary visits which violates fundamental rights of citizens including the right to privacy and leads to harassment based on inaccurate outcomes. The use of the Intelligence-Led Policing Program in Pasco County in the USA led to unwarranted searches, stops and domiciliary visits (Mcgrory and Bedi, 2020) at random hours of the day for citizens marked

as 'prolific offenders' or those 'not likely to reform'. In a complaint filed by Dalanea Taylor, Tammy Heilman, Darlene Deegan, and Robert A. Jones III against Chris Nocco, in his official capacity as Pasco County Sheriff in 2021, they recounted their experiences of how the algorithmic outputs permitted officials to violate their civil rights as it is official policy (2018) to harass friends, relatives, and family and look for reasons to arrest 'prolific offenders' and write citations.

The Supreme Court in Kharak Singh v. State of Uttar Pradesh 1962, declared police regulation 236 (b) of the U.P. Police Regulations as unconstitutional and violative of Article 21. The regulation allowed officials to make domiciliary visits to 'habitual criminals' or citizens likely to become habitual offenders. Since police is a state subject, each state has its own rules for police officials and such visits are still valid in some states. Moreover, citizens have been arbitrarily stopped in public spaces by police officials to click their photographs without providing any reasons for the action. Mr S.Q. Masood, one of the recipients of such practice by the Hyderabad police had sent a letter questioning the practice and on receiving no response to that from the police, later asked Internet Freedom Foundation to step in. IFF sent a legal notice on May 31, 2021, asking officials to cease the use of such practises as they are 'illegal' and infringe upon the constitutionally guaranteed rights of citizens. Considering the pervasiveness of conventional methods of surveillance will increase manifold with predictive policing tools, it is imperative to limit the role played by prediction outcomes in conducting domiciliary visits, according to the restrictions set by the Puttaswamy and Kharak Singh judgements.

Way forward

No arrest should be made because the law allows the police officer to do so without justification of the exercise. The Indian courts, advocates and academics, have time after time emphasised the requirement of validating reasonable justification, supply of reasons and subjective satisfaction before preventively detaining a citizen. Due to the inability of furnishing reasons for detentions and higher propensity for inaccurate and discriminatory results, in the current form, predictive policing tools provide a shaky ground for warranting detentions and allowing domiciliary visits. Their use also violates the constitutional fundamental rights of citizens guaranteed under Articles 14, 19 (d), 21, and 22. Moreover, these outcomes are not admissible in courts to either provide legitimacy to the detention order or the ability to contest it. While recognizing the limitations of the predictive policing tools specifically to predict potential offenders or victims, it is important to acknowledge that a greater insight into place-based crimes could assist in bolstering context-specific, state-led interventions including community building, and situational crime prevention practices, for crime-ridden neighbourhoods. A blanket ban on predictive policing tools would limit us from using the technology to reduce crimes and criminogenic factors in the long term. The existing safeguards against preventive detentions inherent to section 151 and the restrictions on its use as proposed by courts, provide the basis for the following recommendations that preclude possibilities of unlawful preventive detentions using place-based predictive policing tools in India:

- State police departments should remove Personally Identifiable Information (PII) of sheeted persons, ex-convicts and suspected criminals when sharing data for developing predictive policing tools with private or public entities until necessary statutory provisions to protect informational and spatial privacy are in place. Instead, the focus should be on predicting the offence with place-based policing and not the offender, to prevent unnecessary domiciliary visits and arbitrary preventive detentions. Police departments should only share the age of the criminal, type of crime committed, location and time of the crime for training the algorithms.
- Policing algorithms should only be trained on data collated by NCRB on principle offences as it has a relatively comprehensive dataset on it. Principal offences are heinous crimes that present imminent danger to public safety and need to be prevented. This will increase the accuracy of policing outcomes in promoting community safety and reducing the risk of unlawful preventive detentions. But, even the restricted use of such tools requires making necessary amendments to the Evidence Act, 1872 and Criminal Procedure Code, 1973 to provide evidentiary value to the algorithmic outcomes.
- One way to address inaccuracy of outcomes arising from incomplete and biased datasets would be to add data on underrepresented types of crime to the training data (Lee, 2019). However, I believe these

datasets must represent ground realities; adding synthetic data to address incompleteness of datasets or increasing the representation of other sections of the population using weighted averages, should be avoided. Or else, it will induce inherent tensions between fairness and accuracy of outcomes (Corbett-Davies, 2017).

- Third-party audits need to be conducted to regularly evaluate the risks to the rights of the data subjects and risks related to the technology, in the deployment stage. The checklist to conduct audits should mention a) the theory of crime prevention that guided the development of the tools; b) targeted types of crimes; c) sources of data, types of technology employed, parties involved (public and private), source code and process; d) standards and criteria to assess the tool and the process adopted for arriving at the criteria for evaluation; e) skill set required by the analyst to understand the outcome; f) the risks and benefits for subjects; g) reliability and accuracy of the system, and; h) evaluation of recent audit report against the results of previous audit reports for longitudinal evaluation of the tool. These audit reports should be made available in the public domain in the form of summary reports excluding source codes, similar to performance audits by the Comptroller and Auditor General of India for Crime and Criminal Tracking Network and Systems (CCTNS) (Ministry of Home Affairs, 2020) to enhance the transparency and accountability of their use (Scanlan, 2019). Additionally, official state police websites and notice boards outside police stations should be used to make citizens aware of the deployment of such tools in their jurisdiction to ensure transparency of their use.
- State-wide SOPs and training modules should be developed for police officials to facilitate cautious and judicious use of these tools to circumvent possibilities of unlawful preventive detentions with the use of place-based policing tools. NCRB and the Centre for Development of Advanced Computing (CDAC) should develop them in collaboration with private and public developers of such tools. The training modules aim to sensitise officials of the increased risks to violations of civil liberties and criminal justice norms with the use of such tools, the mechanics of the tools and the underlying technologies, the role played by police officials in data collection and its analysis, and steps for ensuring the use of such tools are compliant with the existing laws and standards for preventive detentions. Such guidelines were also developed and shared to facilitate the use of CCTNS (Ministry of Home Affairs, 2019). It would also include case studies of deployed predictive policing tools in India and globally. These trainings could be used as an opportunity to explain inherent biases in policing models and collaboratively develop ways of addressing them. The states must be provided with handholding support including a budget from the Centre for an analyst for six months to address the queries raised by officials acting upon the outcomes.

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