International Journal of Innovative Research in Computer Science and Technology (IJIRCST)
ISSN (Online): 2347-5552, Volume-12, Issue-5 September 2024
https://doi.org/10.55524/ijircst.2024.12.5.3
Article ID IJIRD-1349, Pages 14-23
www.ijircst.org

AI-Policing in India- Existing Research and Where to Begin Future Research?

Ms. Saswati Nath[1], and Prof. Arup Barman[2]

[1] Superintendent of Training, North East Police Academy (NEPA), Shillong, Meghalaya, India
[2] Professor & Head, Department of Business Administration, Assam University, Silchar, Assam, India

Correspondence should be addressed to Arup Barman; abgeet@gmail.com

Received 26 July 2024; Revised 9 August 2024; Accepted 23 August 2024

ABSTRACT- Automated systems in policing show its promise, with machine learning allowing early intervention for at-risk youth. Randomized trials in the US show the deterrent effects of police on crime. Autonomous robots allow closer inspection of dangerous situations, paving the way for the development of lawful artificial agents. AI Policing in India is a burgeoning field that holds immense promise in transforming traditional law enforcement practices. As artificial intelligence technologies continue to advance, their integration into policing operations has the potential to revolutionize crime prevention, detection, and investigation.

This paper delves into the landscape of AI policing in India, exploring its implementation, impact on crime prevention, ethical considerations, public perception, and prospects. By delving into these facets, this article aims to provide a comprehensive overview of the evolving role of AI in shaping the future of policing in the Indian context.

KEYWORDS: Crime Tracking, Predictive Policing, Surveillance, Traffic Management, Law Enforcement

I. INTRODUCTION

The term "AI policing" describes the use of artificial intelligence (AI) in many areas of law enforcement to streamline operations, enhance overall efficiency, and improve decision-making processes. Law enforcement organizations want to better anticipate and prevent crimes by using AI techniques, which will eventually make the community safer. Utilizing artificial intelligence (AI) to streamline operations, increase overall efficiency, and enhance decision-making processes is referred to as "AI policing" in several fields of law enforcement. Using AI approaches, law enforcement agencies want to better anticipate and prevent crimes, ultimately leading to a safer community. Systems scan vast volumes of data and spot trends that could point to illegal conduct using sophisticated algorithms and machine learning approaches. The key aspects of AI policing are - (i) Surveillance and monitoring; (ii) Predictive policing; (iii) Investigation and evidence analysis; (iv) Traffic management; (v) Cybersecurity; and (vi) Community engagement and support. Side by side, many challenges exist in the adaptation of AI in policing. Some of the indicative issues are (i) the issues of civil liberty, (ii) issue bias and fairness due to crop-up discriminatory issues, (iii) ethical issues; and the (iv) issues of training and development.

AI policing in India is in the nascent stages. Selectively only in a few states of India AI and predictive policing are in implementation. AI policing is a critical system and process, having multifaceted aspects. As AI policing in India is still in an embryonic stage of implementation, understanding total management of AI applications in crime tracking, governance and social safety, data systems, data collection, ethical, bias and debiasing process, technology application and crime profiling, decision, application for designing criminalistic algorithms, etc. many more allied issues. At the same time training and capacity for AI policing are the great challenges that need solutions in the days of AI in India

II. AIM AND OBJECTIVES

The main aim of the study is to appreciate AI policing in India and to discover the status of existing trends of research for future deep exploration of AI in India.

The aim is to accomplish the following research objectives

- Firstly, to create a descriptive portrait of the process view of AI policing;
- Secondly, to examine the research concentration on AI policing;
- Thirdly, to examine future and possible research in the context of AI policing in India.

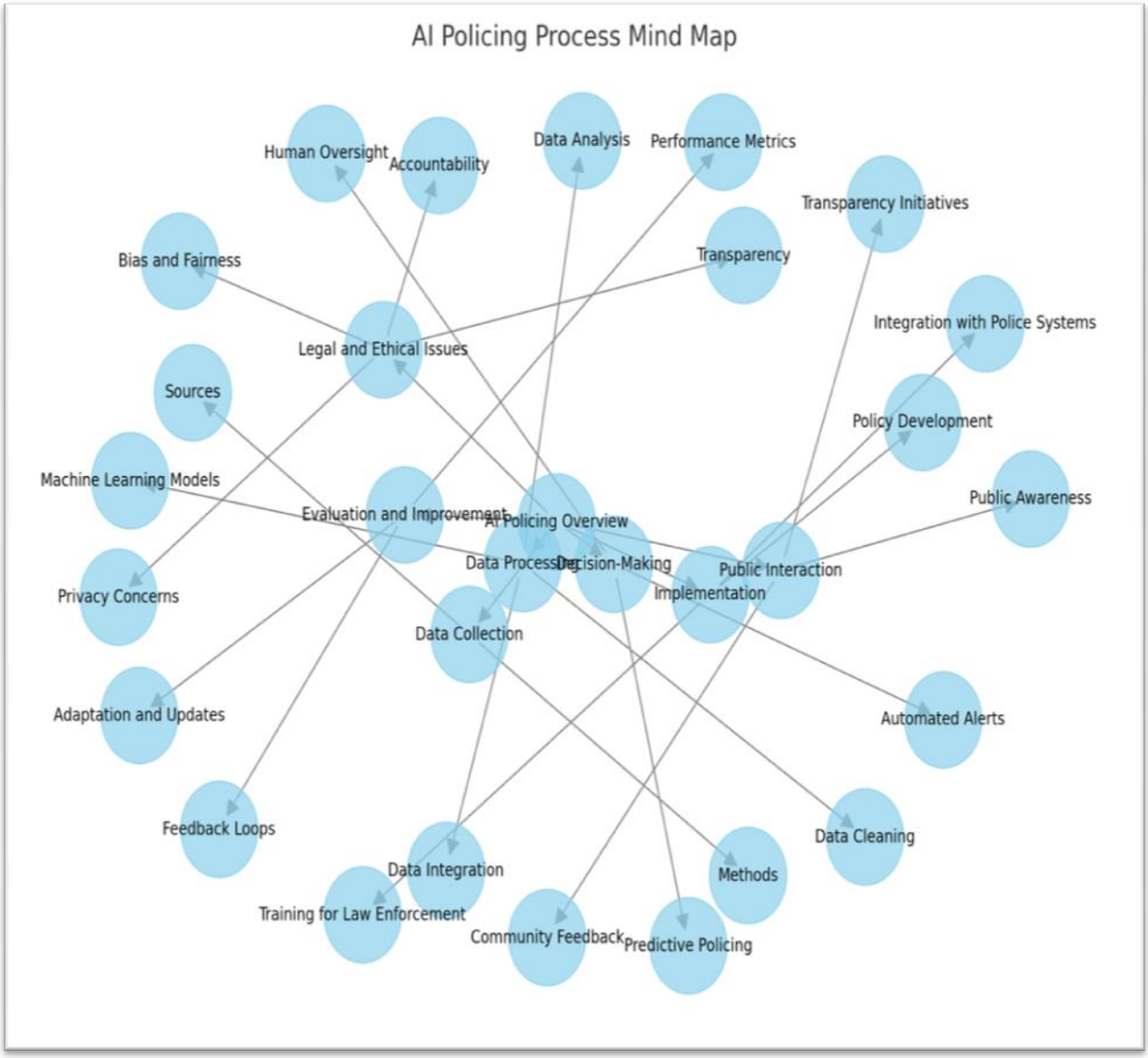
III. METHODOLOGY OF THE STUDY

Our study is purely a review-based analysis. We collected the kinds of literature from multiple sources. Many a time to collect the pieces of evidence we took the support of the AI applications of SCI-Space, the free version to search and verify the stored and available and stored kinds of literature.

IV. PROCESS VIEW OF AI POLICING

Advanced technologies are integrated into several parts of law enforcement through the process of AI policing, which is a complete strategy. Along with addressing moral and legal issues, it seeks to improve policing's efficacy, efficiency, and equity. To make sure AI technologies are utilized ethically and effectively in the interest of public safety, this process entails a continuous cycle of data gathering, processing, decision-making, implementation, public involvement, and assessment. Artificial intelligence

policing is a multifaceted process that involves complicated interactions between data, technology, human judgment, and social variables. Data collection and processing, decision-making, implementation, handling ethical and legal concerns, public engagement, ongoing review, and improvement are all included in the process. It takes significant thought and management to make sure AI tools are applied in law enforcement in an efficient, moral, and responsible manner because each step has its own unique set of difficulties and complications (Figure 1)



Source: Barman. A, 2024 (Author[2])

Figure 1: Complex View of AI Policing

Beyond a clear process view of AI integration in policing, the study is not going to proceed further. We explored process view through and flow chart for AI policing through AI application. The main node for exploration was AI Policing as a process, shown in below Figure 2. The figure captured as far as possible the contents, processes and activities of AI policing from the generalist points of view. The main steps for AI policing are – (1) Data Collection, (2) Data Processing (3) Decision Making (4) Implementation (5) Legal and ethical issues (6) Public Interaction; and finally (7) Evaluation and Improvement. Artificial intelligence (AI) improves human inquiry by offering capabilities for data analysis, pattern identification, predictive policing, and resource management. AI combines data collection and analysis by aggregating all the facilities such as data gathering from Crime Reports, Social Media, Surveillance Footage, and Public Records. An AI system for AI-Policing analyses data through pattern recognitions and correlations in crime data, thereby facilitating in uncovering of trends and hotspots.

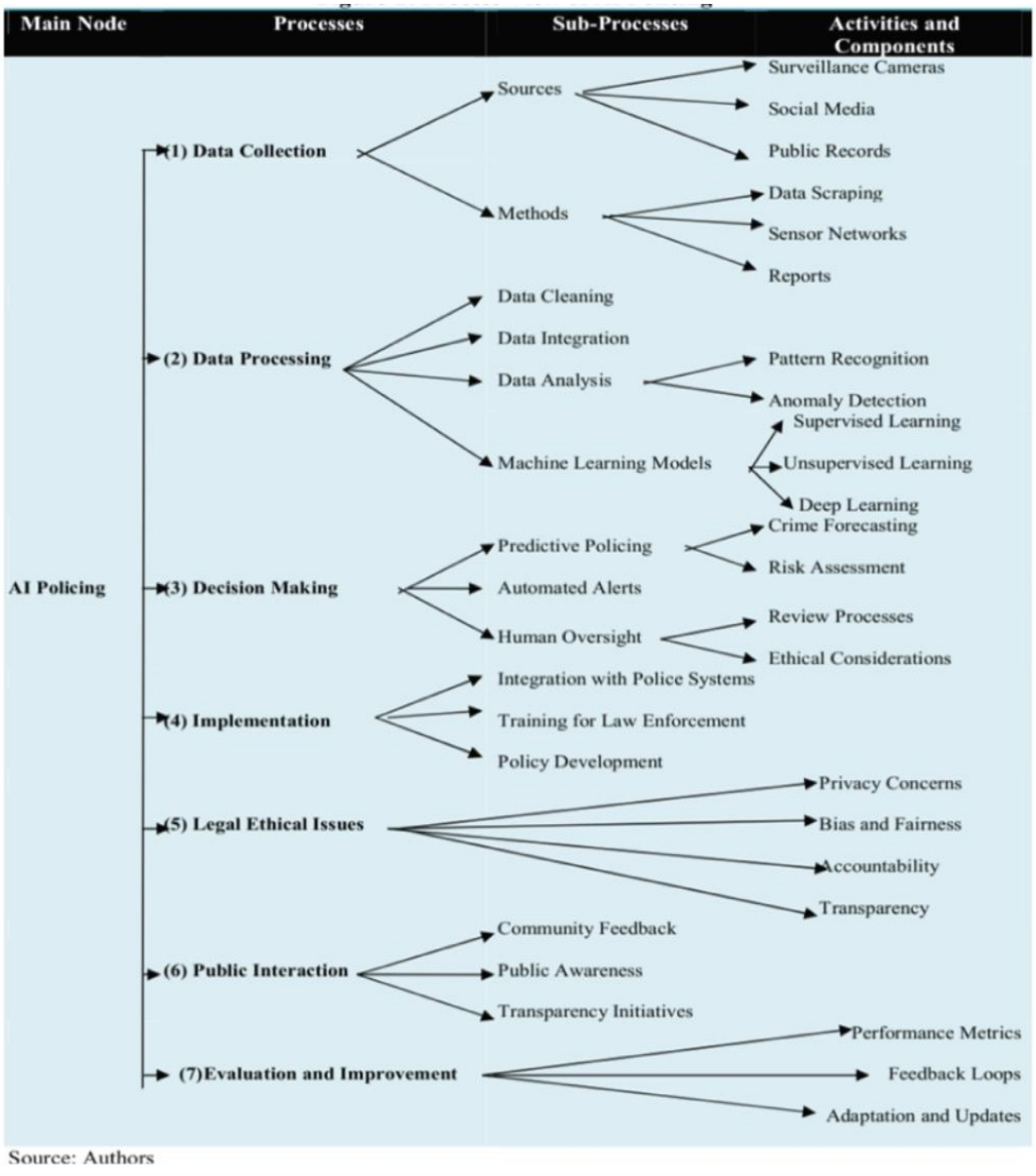


Figure 2: Process View of AI Policing

AI policing most frequently uses the term predictive policing which helps in crime forecasting by analysing historical crime data and assessing the risk at the crime location and times. With the help of predictive analytics police professionals allocate police resources more efficiently for the spots of higher crime rates. AI-policing system offers investigative assistance to police with the help of facial recognition for identifying the suspects, behaviour 11 patterns in video footage for suspicious behaviour, and data mining for large volumes of data. Intelligence-led policing integrates IoT and police network technology, enhancing data processing, unified command, rapid response, and operational efficiency. The researcher on the Suspect Target Management Plan (STMP) by NSW Police known as an electronic police system utilizes the object detection and target tracking algorithms for intelligent traffic management in conjugation of adoption of machine learning for predictive policing. The STMP by NSW Police cautions about the risks of algorithmic policing, automation bias, and impacts on young and Indigenous offenders. AI systems in law enforcement aid in crime investigation, database creation, and criminalistic algorithms. They utilize neural networks for adaptive learning, identifying links, and classification, enhancing policing efficiency and accuracy. Creating a systematic view of AI policing is difficult due to the application, socio-psychological, Ethico-legal, technological, policy and management aspects.

V. REVIEW OF RESEARCH & LITERATURE

A methodical examination of the existing literature on AI policing was reviewed to find evidence of the study on AI policing. The table 1 explains the concentration of studies or focus of the study on the themes and the country revealed-

Table-1: Existing Research & Literature

S.No.	Core Themes	Focused Issues	Locational Context
1	AI adoption in predictive policing[1]	Specialised Technology Training, Innovative Officer Performance, and Collaborative Learning	Abu Dhabi
2	Human-guided training in AI[2]	AI Performance, Ethical Concern, AI-Based Policing, Management Based Regulation	
3	AI Knowledge-Based System[3]	Police n Crime Investigation, Collecting Processing of Data Impacting Police System Management	
4	AI adoption in crime management[4]	Factors influencing Limited Resources, Crime Rates, Lack of Innovative Policing	
5	AI Adoption for AI Policing[5]	Crime Reporting, Need for Organisational and Social Readiness, Need for Management Perspectives	
6	Integrating Techs such as predictive analytics and facial recognition[6]	Effective Management and ethical framework, improved crime detection and operational efficiency	
7	Data-Driven Mgt, and Government Services [7]	AI ethics in predictive policing, emphasizing an ethics of care.	
8	AI for Police Importance systems[8]	To improve public service and crime prevention strategies	
9	Intervention Means[9]	Impacts policing, requiring nuanced regulation to balance crime prevention and online presence	European AI Act (AIA
10	Continuous evaluation of AI applications[10]	AI policing to align with societal values, suggesting treating AI adoption, Social Experiment	
11	Leveraging AI for predictive policing[11]	Video surveillance analysis, forensic science, and criminal profiling	
12	AI adoption in law enforcement[12]	Human accountability, address discrimination, and prompt societies.	
13	AI adoption in law enforcement agencies[13]	Suspect profiling, traffic control, dark web analysis, child pornography detection, and anomaly detection	
14	AIoT for smart policing[14]	context-aware services, mechanisms for AI adoption and management in AI-based policing.	
15	Ethical assessments of AI in policing[15]	Socio-technical complexity, involving human design, comprehensive scrutiny and management of AI adoption	
16	Police formations involve ICT-enhanced solutions[16]	AI tools for effective crime detection, Need for Effective Management	Poland
17	The current state of AI in policing[17]	Crimes like market manipulation, AI adoption in law enforcement management	
18	Enhancing policing capabilities[18]	Trust, ethics, and civil rights implications, issue of law enforcement	North Carolina, USA
19	Leveraging AI for predictive policing[19]	Video surveillance analysis, forensic science, and criminal profiling	
20	AI adoption in law enforcement [12]	Human accountability, addressing discrimination, and prompt societies	
21	AI adoption in law enforcement agencies[20]	Applications in suspect profiling, traffic control, dark web analysis, child pornography detection, and anomaly detection	
22	AIoT for smart policing[21]	Mechanisms for AI adoption and management in AI-based policing applications.	
23	Ethical assessments of AI in policing[22]	Socio-technical complexity, involving human design and impact on individuals	
24	AI adoption in Polish police formations[23]	AI tools for effective crime detection, Management of Efficiency	
25	the current state of AI in policing[24]	Crimes like market manipulation, opportunities and challenges for AI adoption in law enforcement management	
26	Future crime threats[25]	Impact of techno-based crime due to AI enhancement	
27	IoT integration in the police system[26]	Police network technology, enhances data processing, unified command, rapid response, and operational efficiency. AI-based policing	
28	Suspect Target Management Plan (STMP) [27]	NSW Police, cautioning about the risks of algorithmic policing, automation bias	New York, USA
29	Public perception on AI[28]	Algorithmic targets influence opinions	
30	AI systems in law	Aid in crime investigation, database creation, criminalistic	

	enforcement[29]	algorithm, neural networks for adaptive learning, identifying links, and classification.	
31	Adoption of AI in predictive policing[30] [31]	Person-based predictive policing strategies, Issue of technical sophistication, effectiveness	
32	Using machine learning for predictive policing[33]	Management includes Privacy Impact Assessments and Data Protection Impact Assessments to evaluate AI's use.	
33	Intelligent Management System for police equipment[34]	Internet of Things, enhancing scientific management, stability, security, maintenance, and scalability	
34	Suspect Target Management Plan (STMP) [35]	Risks of algorithmic policing, automation bias, and impacts on young and Indigenous	NSW Police, USA
35	Electronic police system utilizing object detection[36]	Target tracking algorithms for intelligent traffic management	
36	AI use. Algorithmic targets influence opinions[37]	Agency Capacity Does not Impact on Public Trust	
37	Tech like K-means, neural networks[38]	Evaluate and select candidates, enhancing decision-making in the Police Force recruitment process	
38	Aid in crime investigation, [39]	Utilize neural networks for adaptive learning, identifying links, and classification, enhancing policing efficiency and accuracy, database creation, and criminalistic algorithms	
39	Person-based predictive policing strategies[40]	Varying technical sophistication, effectiveness, and ethical concerns in AI adoption	
40	AI adoption through Machine Learning[41]	Predictive Policing, Management includes Privacy Impact Assessments and Data Protection Impact Assessments to evaluate AI's	
41	Individual police equipment management system [42]	Based on the Internet of Things, enhancing intelligent management	
42	Criminal Justice System[43]	Machine learning and algorithms, the criminal justice system, but controversies persist	
43	AI crime analysis and management system[44] [45]	Police investigations, utilizing rule-based methods with potential for machine learning and neural network integration	
44	Policing, crime prevention, decision-making support[46]	Advanced AI methods in data mining	Jordan
45	Adoption and management in AI-based policing[47]	AI algorithms, and sensors for traffic control, emergency vehicle prioritization, and fire detection	
46	Specific management aspects of AI in policing[48]	Aiding in predicting threats	
47	Predictive policing and risk assessment raises[49]	Accuracy and management of AI systems for law enforcement purposes	
48	AI tools like MAGNETO for a safer community[50]	Analyzing big data, enhancing data processing, management, analysis, correlation, and reasoning	
49	Implementation of machine learning algorithms in policing[51]	oversight, and the impact of austerity on the development of predictive analytics tools	
50	AI adoption in law enforcement[52]	The ability to analyze vast data is beneficial. Effective management is crucial for the successful implementation of AI	
51	Law enforcement, including managing AI adoption [53]	Collaborative Project of Monash University and Australian Federal Police	Australia
52	Integrating AI technologies into police work[54]	Proper implementation, monitoring, and ethical use of AI tools to enhance law enforcement operations	
53	Enhances efficiency, data-driven processes, and capabilities[55]	Ethical guidelines and human rights must be prioritized to ensure trustworthy AI management in law enforcement	
54	Trustworthy AI adoption and management in AI-based policing[56]	3 pillars approach governing law, ethical standards, and accountable personnel	
55	AI adoption & management[57]	Balancing public safety and civil liberties, address challenges and ensure ethical use	
56	AI adoption in law enforcement [58]	Leveraging AI's analytical capabilities for crime-solving	USA Law Enforcement
57	Smart patrolling in policing, [59]	AI and ML for effective patrol routes based on spatial-temporal crime data, enhancing security and optimizing police resource allocation	

	AI adoption in policing Crime Prevention[60]	Enhances crime prevention, aligning with legal frameworks; legal protections for suspects may lag; AI advancements, necessitating adjustments to balance crime prevention and legal rights	
58	Evaluate citizens' perspectives on AI use[61]	Viewpoints on security, privacy, and resistance, offering insights for public engagement in AI-based policing management	
59	Algorithmic policing[62]	Utilizes automated risk scores to prioritize work amid budget cuts, allowing officers to co-construct decisions by scrutinizing scores alongside other considerations	UK
60	Managing innovation in the police service[63]	cultural changes and emphasized celebrating success, admitting mistakes, and customer-focused service delivery	
61	Framework integrating BWCs, drones, and AI[64]	For adoption of these facilitates enhancing situational awareness, evidence collection, safety, efficiency, and compliance	
62	Predictive policing and criminal intelligence[65]	AI and its potential use of AI in different areas of criminal intelligence explored	
63	Digital police[66]	Monitoring and controlling AI activities, Independent Use of AI-Policing according to requirement.	
64	Detecting and Committing Crimes[67]	AI technologies like A/B optimisation, deep fake technologies, and algorithmic profiling play crucial roles	

VI. SUMMARY OF REVIEW AND RESEARCH CONCENTRATION

AI adoption in predictive policing has the potential to enhance crime mitigation performance through factors such as Predictive Policing Adoption, Specialized Technology Training, Innovative Officer Performance, and Collaborative Learning. Human-assisted AI training can boost the performance of AI and deal with ethical issues in AI-aided policing. Policy-centred regulation stresses human participation in the development and training of AI. AI knowledge-based systems assist law enforcers in solving crimes by collecting, analyzing and transforming data into information, thus enhancing the efficiency of managing AI for policing. Factors that determine the adoption of AI in crime management include constrained resources, escalating criminal activities, and the need for new models such as predictive policing.

AI adoption in law enforcement comprises using artificial intelligence (AI) for video surveillance analysis, forensic science, predictive policing, and criminal profiling among others. In this case, issues related to ethics like privacy and bias should be managed well while using it. Therefore, accountability is essential in the process of adopting artificial intelligence into law enforcement, mitigating discrimination concerns and striking balances amid effective law enforcement. The paper discusses Smart Policing's Internet of Things (IoT), indicating AI's role in context-aware services. To examine whether or not it is correct to use AI for surveillance in policing one has to make sure that AI adoption in law enforcement should prioritize human accountability, address discrimination, and prompt societies to consider the balance between effective law enforcement and individual freedoms.

Literal evidence on an exploration of AIoT for smart policing highlighted the involvement of AI in context-aware services. Ethical assessments of AI in policing should consider the socio-technical complexity, involving human design and its effect on individuals, to ensure comprehensive scrutiny and management of AI adoption. Police officers in North Carolina think that AI enhances their capabilities to fight crimes but have worries about trust, ethics, and civil rights violations. IoT-driven intelligence-led policing – Integration of police network technology with IoT helps in data processing, unified command structure, quick response and operational efficiency. The NSW Police's Suspect Target Management Plan (STMP) warns against perils associated with algorithmic policing, automation bias as well as harm it can do towards young people or Indigenous offenders. Artificial Intelligence systems used in law enforcement help solve criminal cases as well as generate databases and criminalistic algorithms.

VII. WHAT EMPHASIZED WHERE?

The Abu Dhabi Police has been a pioneer in the adoption of Artificial Intelligence (AI) in predictive policing, which has been shown to enhance crime mitigation performance. This is due to factors such as Predictive Policing Adoption, Specialised Technology Training, Innovative Officer

Performance, and Collaborative Learning. Human-guided training in AI can enhance AI performance and address ethical concerns in AI-based policing. Management-based regulation emphasizes human oversight in AI development and training.

AI adoption in policing involves integrating technologies like predictive analytics and facial recognition, requiring ethical frameworks to guide responsible deployment for improved crime detection and operational efficiency. AI ethics in predictive policing emphasize an ethics of care. AI adoption in law enforcement agencies is progressing, with applications like suspect profiling, traffic control, dark web analysis, child pornography detection, and anomaly detection presenting both challenges and opportunities.

The European Artificial Intelligence Act (AIA) impacts policing, requiring nuanced regulation to balance crime prevention and online presence. The paper emphasizes the continuous evaluation of AI applications in policing to align with societal values, suggesting treating AI adoption as a social experiment for responsible use.

AI adoption in law enforcement agencies is progressing, with applications like suspect profiling, traffic control, dark web analysis, child pornography detection, and anomaly detection presenting both challenges and opportunities. The paper explores AIoT for smart policing, highlighting AI's role in context-aware services. Ethical assessments of AI in policing should consider the socio-technical complexity, involving human design and its impact on individuals, to

ensure comprehensive scrutiny and management of AI adoption.

Police officers in North Carolina view AI as enhancing policing capabilities but express concerns about trust, ethics, and civil rights implications. Intelligence-led policing integrates IoT and police network technology, enhancing data processing, unified command, rapid response, and operational efficiency.

AI adoption in predictive policing is progressing, with applications such as suspect profiling, traffic control, dark web analysis, child pornography detection, and anomaly detection presenting both challenges and opportunities. Factors influencing AI adoption include limited resources, increasing crime rates, and the need for innovative policing models like predictive policing. Management-based regulation emphasizes human oversight in AI development and training. Management includes Privacy Impact Assessments and Data Protection Impact Assessments to evaluate AI's use in cyber-policing data protection environments.

AI adoption in law enforcement faces challenges online due to limited intervention means, and the European Artificial Intelligence Act (AIA) impacts policing, requiring nuanced regulation to balance crime prevention and online presence. Continuous evaluation of AI applications in policing is crucial to align with societal values and treat AI adoption as a social experiment for responsible use.

Ethical considerations like privacy and biases require careful management. AI adoption in law enforcement should prioritize human accountability, address discrimination, and prompt societies to consider the balance between effective law enforcement and individual freedoms. AI adoption in law enforcement agencies is progressing, with applications like suspect profiling, traffic control, dark web analysis, child pornography detection, and anomaly detection presenting both challenges and opportunities.

Intelligence-led policing integrates IoT and police network technology, enhancing data processing, unified command, rapid response, and operational efficiency. The paper discusses the Suspect Target Management Plan (STMP) by NSW Police, cautioning about the risks of algorithmic policing, automation bias, and impacts on young and Indigenous offenders systems in law enforcement aid in crime investigation, database creation, and criminalistic algorithms. They utilize neural networks for adaptive learning, identifying links, and classification, enhancing policing efficiency and accuracy.

VIII. POSSIBLE AND FUTURE RESEARCH

Many papers have discussed the adoption of AI in predictive policing, focusing on person-based predictive policing strategies. It is concerned with different levels of technological advancement effectiveness and ethical concerns related to the adoption of AI. Most studies reviewed were on AI in policing and law enforcement. Some studies were found on AI introduction into the police system in the context of Abu-Dhabi, the UK, the USA, Finland, Australia, Jordan, and Poland. The literature here focuses on AI adoption in law enforcement as well as implementation, technology development and its effect on police performance. Therefore, for the effective use of AI technology in crime detection and upgrading of police/security systems a complex integration is needed. These include; Integrated Al Technology Crime Management System (ALTO-COPS), Intelligent Policing, Advanced Analytics Based HQrs Crime Monitoring System (DAPCMS), etc., and more than 12 such systems are in practice worldwide including U.S.A., U.K., China & many more countries. Online challenges of AI implementation to law enforcement are linked with a lack of intervening tools and such aspects of the European Artificial Intelligence Act (AIA) have implications on police practice requiring a nuanced approach to regulate between preventing crime and having an online existence. The online challenges of AI based on the statute of the country is a challenge to Indian police too as indicated by the studies.

The Indian police force has already started using Artificial Intelligence. We have some evidence that shows how it is applied by Uttar Pradesh Police Delhi Police Hyderabad. In a large country like India where population is increasing leading to a rise in crime rate. The nation should look forward to greater assistance from technology. The current literature dealing with India is hardly anything other than a brief paper showing the advantages that police are getting out of AI technology. While exploring the prospects of research on AI policing in India, the crucial focus should be the adoption intention of AI crime management [68]Factors significant for AI adoption in law enforcement agencies may enhance efficient and innovative implementation of intelligence-led predictive AI policing [70]. Understanding the process of debiasing in crime mapping, analytics and predictive systems has a lot of potential in an efficient police operation system in India. How to leverage 5G, big data analysis, and intelligent monitoring equipment can significantly enhance public safety and security and can serve as the input for bringing revolution to the traditional wireless and telecom-based policy management system. Research and experimentation can be initiated for integrating large-scale language models like GPT to reduce the administrative burden of police management in the system. A study is required on the proliferation of governance in the domain of police in India to design a framework for police and public management that may guide the future direction AI led police integrating public governance. In addition, management of the whole episode of AI police in India itself can open up many new vistas from the aspects of technology, policy, governance, and law enforcement [70]

IX. CONCLUSION

In conclusion, AI adoption in policing is progressing, with applications such as predictive policing, video surveillance analysis, forensic science, and criminal profiling presenting both challenges and opportunities. Studies underscore the growing recognition of the potential for AI applications. For the benefit of law enforcement and crime management, intelligence-led and predictive policing models have ample potential to revolutionize the system and strategies for crime management in India in future[69] . As the study on predictive policing in Delhi indicated on lacking public accountability and biases of data collection [70]a study on data aspects of AI-policing will help a lot in future.

AI adoption in policing is a promising solution for improving crime prevention and efficiency. However, it requires careful management, ethical considerations, and a balance between efficiency and civil rights. Studies connected to the management of AI- adoption in policing

systems need detailed research and evaluation. A deep social-technical study on AI Applications and management is yet to be conducted in the context of the Indian police system.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

ACKNOWLEDGMENT

This paper is submitted to the Department of Business Administration for the presentation of the term paper, as partial fulfilment of PhD coursework Examination 2024. The manuscript was prepared under the full guidance of Prof. Arup Barman (HoD & Supervisor). This manuscript has been submitted to IJIRCST on the recommendation of the supervisor and the members of the RAC committee, of DBA, Assam University, Silchar, India.

REFERENCES

[1] R. Hind, S. Al Shamsi, and S. Su'aidi, "Artificial Intelligence Adoption in Predictive Policing to Predict Crime Mitigation Performance," International Journal of Sustainable Construction Engineering and Technology, 2023. https://doi.org/10.30880/ijscet.2023.14.03.025

[2] C. Coglianese and C. Crum, "Taking Training Seriously: Human Guidance and Management-Based Regulation of Artificial Intelligence," arXiv.org, 2024. https://doi.org/10.48550/arxiv.2402.08466.

[3] C. Fernandez-Basso, K. Gutiérrez-Batista, J. Gómez-Romero, M. D. Ruiz, and M. J. Martin-Bautista, "An AI Knowledge-Based System for Police Assistance in Crime Investigation," Expert Systems, 2024. https://doi.org/10.1111/exsy.13524.

[4] R. S. Praveen, N. K. Gummadidala, and K. Maddulety, "Analysis of Factors Influencing the Adoption of Artificial Intelligence for Crime Management," 2020. https://doi.org/10.1007/978-3-030-64849-7_1.

[5] B. Vermeeren, D. de Kool, and B. Steijn, "Perceived Opportunities and Challenges of Artificial Intelligence Within the Police - A Public Management Perspective," 2021. https://doi.org/10.1007/978-3-030-42523-4_23.

[6] O. Lunhol and P. Torhalo, "Artificial Intelligence in Law Enforcement: Current State and Development Prospects," 2024. https://doi.org/10.55295/psl.2024.ii12.

[7] P. Asaro, "AI Ethics in Predictive Policing: From Models of Threat to an Ethics of Care," IEEE Technology and Society Magazine, 2019. https://doi.org/10.1109/MTS.2019.2915154.

[8] S. Ramos, J. A. Pérez-López, and R. Abreu, "An Analysis of the Importance of Artificial Intelligence on the Information System of Police Forces," 2020. https://doi.org/10.23919/CISTI49556.2020.9141006.

[9] I. M. Sunde, "AI-Based Law Enforcement Online: The Impact of the European Artificial Intelligence Act (AIA)," 2022. https://doi.org/10.15845/bjclcj.v10i2.3844.

[10] F. Dechesne, V. Dignum, L. Zardiashvili, and J. Bieger, "Long-Term Research Strategy for Artificial Intelligence and Ethics at the Police," 2019. https://www.universiteitleiden.nl/binaries/content/assets/rechtsgeleerdheid/instituut-voor-metajuridica/artificiele-intelligentie-en-ethiek-bij-de-politie/research-strategy-ai-ethics-dutch-police-final.pdf

[11] L. Z. Kahla, "Leveraging Artificial Intelligence for Crime Detection and Prevention," Indian Scientific Journal of Research in Engineering and Management, 2024. https://doi.org/10.55041/ijsrem34207.

[12] T. Rademacher, "Artificial Intelligence and Law Enforcement," 2020. https://doi.org/10.1007/978-3-030-32361-5_10.

[13] S. Raaijmakers, "Artificial Intelligence for Law Enforcement: Challenges and Opportunities," 2019. https://doi.org/10.1109/MSEC.2019.2925649.

[14] C. H. Huang, T. C. Chou, and S. H. Wu, "Towards Convergence of AI and IoT for Smart Policing," Journal of Global Information Management, 2022. https://doi.org/10.4018/jgim.296260.

[15] Z. J. Goldberg, "How to Conduct an Ethics Assessment of AI in Policing," 2022. https://doi.org/10.1145/3501247.3539509.

[16] J. Dworzecki and I. Nowicka, "Artificial Intelligence (AI) and ICT-Enhanced Solutions in the Activities of Police Formations in Poland," 2021. https://doi.org/10.1007/978-3-030-88972-2_11.

[17] H. M. Harris, "Artificial Intelligence and Policing of Financial Crime: A Legal Analysis of the State of the Field," Law, Governance and Technology Series, 2022. https://doi.org/10.1007/978-3-030-88036-1_12.

[18] R. P. Dempsey, J. R. Brunet, and V. Dubljević, "Exploring and Understanding Law Enforcement's Relationship with Technology: A Qualitative Interview Study of Police Officers in North Carolina," Applied Sciences, 2023. https://doi.org/10.3390/app13063887.

[19] S. Raaijmakers, "Artificial Intelligence for Law Enforcement: Challenges and Opportunities," 2019. https://doi.org/10.1109/MSEC.2019.2925649.

[20] C. H. Huang, T. C. Huang, and S. Wu, "Towards Convergence of AI and IoT for Smart Policing," Journal of Global Information Management, 2022. https://doi.org/10.4018/jgim.296260.

[21] Z. J. Goldberg, "How to Conduct an Ethics Assessment of AI in Policing," 2022. https://doi.org/10.1145/3501247.3539509.

[22] J. Dworzecki and I. Nowicka, "Artificial Intelligence (AI) and ICT-Enhanced Solutions in the Activities of Police Formations in Poland," 2021. https://doi.org/10.1007/978-3-030-88972-2_11.

[23] H. M. Harris, "Artificial Intelligence and Policing of Financial Crime: A Legal Analysis of the State of the Field," Law, Governance and Technology Series, 2022. https://doi.org/10.1007/978-3-030-88036-1_12.

[24] M. Caldwell, J. T. A. Andrews, T. Tanay, L. D. Griffin, "AI-Enabled Future Crime," Crime Science, 2020. https://doi.org/10.1186/S40163-020-00123-8.

[25] X. L. Jiang, "Intelligence-Led Policing," Journal of Henan Police College, 2011.

[26] E. Englezos, "Policing by Algorithm: NSW Police's Suspect Target Management Plan," Alternative Law Journal, 2023. https://doi.org/10.1177/1037969x221147745.

[27] K. J. Schiff, D. S. Schiff, I. T. Adams, J. McCrain, and S. M. Mourtgos, "Institutional Factors Driving Citizen Perceptions of AI in Government: Evidence from a Survey Experiment on Policing," Public Administration Review, 2023. https://doi.org/10.1111/puar.13754.

[28] M. B. Goncalves, M. Anastasiadou, and V. Santos, "AI and Public Contests: A Model to Improve the Evaluation and Selection of Public Contest Candidates in the Police Force," Transforming Government: People, Process and Policy, 2022. https://doi.org/10.1108/tg-05-2022-0078.

[29] D. Stepanenko, D. Bakhteev, and Y. Evstratova, "The Use of Artificial Intelligence Systems in Law Enforcement," 2020. https://doi.org/10.17150/2500-4255.2020.14(2).206-214.

[30] T. W. Hung and C. P. Yen, "On the Person-Based Predictive Policing of AI," Ethics and Information Technology, 2021. https://doi.org/10.1007/S10676-020-09539-X.

[31] S. Thorpe and L. Mitchell, "Towards Modelling Artificial Intelligence Parsing Documents for Cyber-Policing Data Protection and Privacy Environments Using Privacy Impact Assessments and Data Protection Impact Assessment

Questionnaires," 2024. https://doi.org/10.1109/southeastcon52093.2024.10500265.
[32] Z. Y. Xu, "The Intelligent Management System of Police Equipment Based on the Internet of Things," Applied Mechanics and Materials, 2013. https://doi.org/10.4028/WWW.SCIENTIFIC.NET/AMM.422.191.
[33] E. Englezos, "Policing by Algorithm: NSW Police's Suspect Target Management Plan," Alternative Law Journal, 2023. https://doi.org/10.1177/1037969x221147745.
[34] C. Wang, X. Lei, S. Liu, and M. Ye, "Electronic Police System in Intelligent Traffic," 2022. https://doi.org/10.1109/CIS58238.2022.00039.
[35] K. J. Schiff, D. S. Schiff, I. T. Adams, J. McCrain, and S. M. Mourtgos, "Institutional Factors Driving Citizen Perceptions of AI in Government: Evidence from a Survey Experiment on Policing," Public Administration Review, 2023. https://doi.org/10.1111/puar.13754.
[36] K. Jackson, D. S. Schiff, I. T. Schiff, J. Adams, S. M. McCrain, and S. M. Mourtgos, "Institutional factors driving citizen perceptions of AI in government: Evidence from a survey experiment on policing," *Public Administration Review*, 2023, https://doi.org/10.1111/puar.13754.
[37] M. Bailao, M. A. Goncalves, and V. Santos, "AI and public contests: A model to improve the evaluation and selection of public contest candidates in the police force," *Transforming Government: People, Process and Policy*, 2022, https://doi.org/10.1108/tg-05-2022-0078.
[38] D. Stepanenko, D. Bakhteev, and Y. Evstratova, "The use of artificial intelligence systems in law enforcement," 2020, https://doi.org/10.17150/2500-4255.2020.14(2).206-214.
[39] T.-W. Hung and C.-P. Yen, "On the person-based predictive policing of AI," *Ethics and Information Technology*, 2021, https://doi.org/10.1007/S10676-020-09539-X.
[40] S. Thorpe and L. Mitchell, "Towards modeling artificial intelligence parsing documents for cyber-policing data protection and privacy environments using privacy impact assessments and data protection impact assessment questionnaires," 2024, https://doi.org/10.1109/southeastcon52093.2024.10500265.
[41] T. Marar, "Individual police equipment management system based on the internet of things," 2022, https://doi.org/10.1109/icbaie56435.2022.9985913.
[42] J. Loeb, "Algorithms on the beat: AI and the future of policing," *Engineering & Technology*, 2018, https://doi.org/10.1049/ET.2018.0401.
[43] J. W. Brahan, K. P. Lam, H. Chan, and W. Leung, "AICAMS: Artificial intelligence crime analysis and management system," *Knowledge-Based Systems*, 1998, https://doi.org/10.1016/S0950-7051(98)00064-1.
[44] J. Gonçalves, "A strategic plan to improve police response and decision-making during major incidents," 2022, https://doi.org/10.31235/osf.io/9e4ru.
[45] S. Alzou'bi, H. Alshibl, and M. A. Al-marital, "Artificial intelligence in law enforcement: A review," *International Journal on Artificial Intelligence Tools*, 2014, https://doi.org/10.5121/IJAIT.2014.4401.
[46] J. D. Reddy, B. R. V. Gils, R. Dinesh, and V. R. Nellepalli, "AI-based smart traffic management," *Indian Scientific Journal of Research in Engineering and Management*, 2023, https://doi.org/10.55041/ijsrem24517.
[47] E. E. Joh, "Artificial intelligence and policing: First questions," *Social Science Research Network*, 2018.
[48] R. A. Berk, "Artificial intelligence, predictive policing, and risk assessment for law enforcement," *Social Science Research Network*, 2021, https://doi.org/10.1146/ANNUREV-CRIMINOL-051520-012342.
[49] A. Pawlicka, M. Choraś, M. Przybyszewski, L. Belmon, R. Kozik, and K. Demestichas, "Why do law enforcement agencies need AI for analyzing big data?" 2021, https://doi.org/10.1007/978-3-030-84340-3_27.
[50] A. Babuta and M. Oswald, "Machine learning predictive algorithms and the policing of future crimes: Governance and oversight," *Social Science Research Network*, 2021, https://doi.org/10.4324/9780429265365-11.
[51] J. Charles, "AI and law enforcement," *IEEE Intelligent Systems & Their Applications*, 1998, https://doi.org/10.1109/5254.653229.
[52] C. Wilson, J. Dalins, and G. Rolan, "Effective, explainable and ethical: AI for law enforcement and community safety," 2020, https://doi.org/10.1109/AI4G50087.2020.9311021.
[53] D. Delchev, "Legal aspects of artificial intelligence and its application in the work of police authorities," *Law Journal of New Bulgarian University*, 2022, https://doi.org/10.33919/ljnbu.22.1.4.
[54] S. Roksandic, N. Protrka, and M. Engelhart, "Trustworthy artificial intelligence and its use by law enforcement authorities: Where do we stand?" 2022, https://doi.org/10.23919/mipro55190.2022.9803606.
[55] M. Oswald, "A three-pillar approach to achieving trustworthy and accountable use of AI and emerging technology in policing in England and Wales: Lessons from the West Midlands model," *Social Science Research Network*, 2021, https://doi.org/10.2139/SSRN.3812576.
[56] E. E. Joh, "Increasing automation in policing," *Communications of The ACM*, 2019, https://doi.org/10.1145/3372912.
[57] J. Charles, "Focus: AI and law enforcement," *IEEE Intelligent Systems*, 1998.
[58] C. Guevara and M. Santos, "Smart patrolling based on spatial-temporal information using machine learning," *Mathematics*, 2022, https://doi.org/10.3390/math10224368.
[59] K. Blount, "Forfeiting legal protections to prevent crime," 2020, https://doi.org/10.34632/CATOLICALAWREVIEW.2020.9548.
[60] J. M. Rodríguez-Jiménez, "An approach for the police districting problem using artificial intelligence," 2018, https://doi.org/10.1007/978-3-030-01851-1_14.
[61] P. S. Bayerl and H. Gibson, "Safety, privacy, or both: Evaluating citizens' perspectives around artificial intelligence use by police forces," *Policing & Society*, 2023, https://doi.org/10.1080/10439463.2023.2211813.
[62] D. Marciniak, "Algorithmic policing: An exploratory study of the algorithmically mediated construction of individual risk in a UK police force," *Policing & Society*, 2022, https://doi.org/10.1080/10439463.2022.2144305.
[63] K. Jones, "Managing innovation in the police service," *Total Quality Management & Business Excellence*, 1998, https://doi.org/10.1080/0954412989126.
[64] A. Davies and G. Krame, "Integrating body-worn cameras, drones, and AI: A framework for enhancing police readiness and response," *Policing: A Journal of Policy and Practice*, 2023, https://doi.org/10.1093/police/paad083.
[65] P. Perrot, "What about AI in criminal intelligence? From predictive policing to AI perspectives," 2017.
[66] A. Semenihin and A. Kondrashin, "'"Digital police" and artificial intelligence: Leading trends for the 21st century," 2019, https://doi.org/10.2991/ASSEHR.K.191221.199.
[67] K. Tang, "AI in criminal law: An overview of AI applications in substantive and procedural criminal law," 2022, https://doi.org/10.1007/978-94-6265-523-2_11.
[68] P. R. S. Gummadidala, N. K. Karippur, and M. K. Maddulety, "Analysis of factors influencing the adoption of artificial intelligence for crime management," 2020, https://doi.org/10.1007/978-3-030-64849-7_1.
[69] V. Marda and S. Narayan, "Data in New Delhi's predictive policing system," 2020, https://doi.org/10.1145/3351095.3372865.
[70] C. Cui, G. Zhou, and C. Chen, "Research on intelligent mobile police application based on 5G technology," 2022, https://doi.org/10.1109/eebda53927.2022.9744766.

ABOUT THE AUTHORS

Ms Saswati Nath is presently serving as at the designation superintendent (Training) servig at North East Police Academy (NEPA- an Institute under Ministry of Home Affairs, GOI), Shillong. Prior to the service at NEPA, she worked as the computer faculty at NEPA. She is a trained faculty on Cyber Crimes, Cyber Forensics and trained professional in digital surveillance for police professionals. She is a member of Advanced Computing Society and Communication Society, India

She has joined to PhD program at Department of Business Administration, Assam University, Silchar on the issue on management of AI-Policing in India under supervision of Prof. Arup Barman.

Prof. Arup Barman (b.June,1972) is a M.Com, PGDipT&D (ISTD), PhD (Mgt), Post Doctorate (2009-2011), D.Litt (Honoris Causa, IIU-India) is serving at department of Business Administration, Assam University, Silchar since Dec, 1998. Professor Barman completed 46 professional certificate and diplomas in the areas of management, development and other aspects of applied business technologies. He published 265 papers of reputed journal, 28 book chapters, attended 29 international seminar conferences. He delivered 200 Session hours of training to researchers, Indian administrative officers, and professionals as resource person/trainers. He is a fellow of World Leadership Academy (WLA) of India and many other international organization of repute. He is a member of many editorialand and review board of prestigious journals.

Professor Barman's research interest is Applied Business Technology, HRD and Skills, Neuro Behavioural aspects of Management. With vast areas of knowledge, he received mutiple national and International awards and recognitions.