



---

## Role of AI in Migration and Border Management: A Critical Analysis

Cyprian Minj

Research Scholar, Department of Sociological Studies, Central University of South Bihar, Gaya, Bihar,  
India-824236, Email: cyprianminj24@gmail.com

---

DOI : <https://doi.org/10.5281/zenodo.18871704>

---

### ARTICLE DETAILS

**Research Paper**

**Accepted:** 16-02-2026

**Published:** 10-03-2026

**Keywords:**

*Artificial Intelligence,  
Migration, Border security  
control, Human rights,  
breaching privacy*

---

### ABSTRACT

Artificial intelligence (AI) has the potential to revolutionise the way states and international organisations seek to manage international migration. AI is gradually going to be used to perform tasks, including identity checks, border security control, and analysis of data about visa and asylum applicants. Focusing on the use of Artificial intelligence (AI) in border control, this paper seeks to explore whether it is an opportunity or a threat to state security, governance, and human rights. The study uses a literature review to come up with major themes such as the efficiency of operations, ethical and human rights issues, governance gaps, impact on the society and global differences in the use of AI. The results show that AI boosts the efficiency, accuracy, and predictive ability of the border control activity greatly, allowing to identify risks in real-time, evaluate them, and improve the management of the migration. All the advantages, however, come at the cost of significant risks associated with algorithmic bias, breaching privacy, dehumanization of migrants, and reduced transparency and accountability.

---

### Introduction

In the contemporary world, Artificial Intelligence (AI) technology is increasingly being used in public and private domains to perform tasks associated with human intelligence, such as the ability to



learn from data, the capacity to recognise images and speech and process natural language.(Beduschi, 2021)

AI is understood as a growing resource of interactive, autonomous, self-learning agency, which enables computational artefacts to perform tasks that require human intelligence to be executed successfully (Beduschi, 2021). Simply put, AI is 'a set of techniques aimed at approximating some aspects of human or animal cognition using machines'(Beduschi, 2021). One of these techniques is machine learning or 'the systematic study of algorithms and systems that improve their (algorithms) knowledge or performance with experience. AI thus refers to technologies that perform tasks associated with humans and act intelligently by learning from data with the aid of algorithms (sets of instructions used to solve problems)(Beduschi, 2021). Algorithms have been used for millennia but have gained importance in our contemporary societies due to the power of computers to gather and analyse large quantities of data at a speed that is far superior to what human being would be capable of doing.

The 20th century experienced the most remarkable growth in the borders management system, the system of custom checkpoints, the system of immigration control. The Cold war also led to the tightening of the border checks through the establishment of militarized borders, and most notably the Berlin wall which symbolized the ideological boundary between the East and the West. The focus was no longer on territory, but on the movement control which included not only the military threat but also the migration, smuggling, and the terrorist.(Mr. Ateeq Javed, 2025)

The post 9/11 era brought in a new era of international security awareness and as a result, the controls along the borders have been tight and the use of digital technology has been incorporated. States started adopting biometric systems, electronic passports, surveillance networks as a part of their border management regimes. Databases were interconnected, and traveller information started being shared across national borders. Nevertheless, the surge in international movement and transnational risks of terrorism and organised crime required more rapid and smarter detection and response mechanisms.(Mr. Ateeq Javed, 2025)

The 21st century has transformed the borders protection landscape after Artificial Intelligence (AI) integration. Facial recognition, predictive analytics, data mining, and machine learning AI technologies are implemented to process huge volume of data on-the-fly. ABC systems like e-gates at airports are automated systems that apply AI to identify people, detect suspicious activity, and facilitate processing. Remote border areas are covered by surveillance drones with computer vision and predictive algorithms to analyse travel patterns and indicate risky individuals. Such systems provide the states with



the most effective and efficient capabilities to secure the borders, which is assured to be accurate, cost-cutting, and quicker in giving a decision.(Mr. Ateeq Javed, 2025)

Yet, the ethical, legal, and social issue of AI integration into border protection is quite concerning. Although AI enhances efficiency and surveillance power, AI also creates the dangers of algorithmic bias, intrusion of privacy, misuse of data, and lack of accountability (Mr. Ateeq Javed, 2025). Opacity of AI systems may be a challenge in guaranteeing fairness or challenging automated decisions, especially against migrants and asylum-seekers whose privileges are already dubious. Besides, the application of predictive analytics in border security also endangers the change of borders into a territory of constant surveillance, where citizens are profiled not based on their actions but on their hypotheses as to what algorithms can imagine they might do.(Mr. Ateeq Javed, 2025)

In the modern world, where states adopt AI to protect their borders, one of the most pressing questions is an answer to the following: can technology really become the guarantee of security without undermining human dignity and rights? The solution lies in the way the societies develop the governance mechanisms to make sure that AI is the instrument of protection, not domination. (Mr. Ateeq Javed, 2025)

### **Problem Statement**

Although AI is expected to improve the security effectiveness, facilitate identification procedures as well as decrease human error, it also provokes the complicated issues connected to privacy, accountability, discrimination, and human rights. Such rapid advancement in technology poses the threat of going faster than ethical and regulatory controls, causing the possibility of misusing personal data, algorithmic discrimination, and undermining basic civil rights.

The key issue is that AI is a twofold phenomenon in border management: it is both a strategic asset and a possible danger. It reinforces the power of a nation state and its capacity to combat threats on the one hand, and on the other, it can become institutionalized surveillance, discrimination, and digital exclusion in a country, particularly among migrants and vulnerable groups. Moreover, the absence of international standards and interoperability frameworks also adds to the inconsistency of a practice and the absence of equal protection of rights among jurisdictions.

Thus, the present research aims to discuss the possibilities and risks of AI in border control critically, as there is an immediate necessity to find the golden mean between technological innovation and the ethical control of the situation. The research question focuses on getting information about



whether the use of AI in border protection can increase security without disrupting the principles of democracy, human rights, and international justice.(Mr. Ateeq Javed, 2025)

### **Research Objectives**

1. To know how AI technology are used in border management.
2. To have an idea regarding the implementation practice of AI on the basis of countries that use AI for its migration and border control.
3. To bring out the advantages and disadvantages of AI in migration and border management based on empirical research and policy papers.
4. To suggest some principles for ethical use of AI in migration and border control for a composite system of governance.

### **Research Significance**

This research is important because it contributes to the analysis of challenging interaction between Artificial Intelligence (AI) and border control in the framework of contemporary governance, security, and human rights. To begin with, the study emphasizes the effectiveness of AI in streamlining borders, enhancing threat detection, and advancing the goals of national security which may be of great value to governments that implement AI technologies. Secondly, it highlights the possible harm of the deployment of AI, such as the existence of algorithmic bias, breach of privacy, and undermining civil liberties, thus informing the creation of ethical and legal systems. In the end, the study can offer a basis of evidence-based policy, interdisciplinary research, and ethical deployment of AI in border security management to ensure that technological progress will enhance security without compromising human rights and democratic principles.(Mr. Ateeq Javed, 2025)

### **Literature Review**

Nalbandian (2022) highlight how in migration and asylum management, increasingly sophisticated artificial intelligence tools have been used to register and manage vulnerable populations without much concern about the potential misuses of the data collected and the overall ethical and legal underpinnings of these operations. He talks about how states and international organizations are increasingly turning to artificial intelligence tools to support the implementation of their immigration policies and programs. Conclusively, he also makes an observation that despite well-intentioned efforts, the decision to use artificial intelligence tools to increase efficiency and support the implementation of migration or asylum management policies and programs often involves jeopardizing or altogether



sacrificing individuals' human rights, including privacy and security, and raises concerns about vulnerability and transparency.

Javed et.al (2025) analyse whether the adoption of Artificial intelligence (AI) in border control is an opportunity or a threat to state security, governance, and human rights. The two-sided character of AI represents a radical prospect of changing the border to seem more modern and also a threat to the democratic control and human rights. They conclude that implementation of AI in border management should be successful with strong ethical principles on the one hand, to achieve the balance between the security goals and the respect of the personal rights through effective human control and transparency, as well as international collaboration. By critically commenting on the functioning of AI, they stress upon the need for interdisciplinary strategies and policy interventions that would help to make AI as the instruments of protection and not control.

Beduschi (2021) Brings in the cases of countries such as Canada, which uses algorithmic decision-making in immigration and asylum determination, and Germany, which has piloted projects using technologies such as face and dialect recognition for decision-making in asylum determination processes. He explores how AI technology can affect international migration management at three different levels namely (1) deepening the existing asymmetries between states on the international plane; (2) modernising states' and international organisations' traditional practices; and (3) reinforcing the contemporary calls for more evidence-based migration management and border security. By examining the effect AI at these three levels, he puts forth the main challenges of using AI solutions for international migration management. It draws on legal, political and technology-facing academic literature, examining the current trends in technological developments and investigating the consequences that these can have for international migration. Finally, he makes an attempt towards contributing to the current debate about the future of international migration management, informing policymakers in this area of growing importance and fast development.

Rinaldi and Teo (2025) examine how widespread use of artificial intelligence technologies in border management throughout the European Union has significant human rights implications extending beyond the commonly examined issues of privacy, non-discrimination and data protection. They highlight the impacts of AI in three ways namely (1) the erosion of freedom of thought, (2) the disempowerment of individuals and (3) the politicization of human dignity. In uncovering these dynamics, they argue for a broader conception of human rights to prevent their gradual erosion and safeguard the core principle of protecting human dignity.



Everuss (2021) focuses on the technological/social transition, referred to as digitisation, in the context of migration and the crossing of borders between sovereign states. Drawing on extant social scientific analysis, he examines how digitisation is fracturing state boundaries and spreading bordering agencies across human-machine and machine-machine interactions. It is a process that involves, on the one hand, embedding state borders in virtual flows of information, and on the other hand, attaching them to the biometrically coded bodies of travellers. Subsequently, he examines how digital technologies provide travellers with new tools to facilitate their migration projects, while at the same time altering the experience of travel, such as by displacing bordering labour onto travellers.

Korkmaz and Bircan (2021) argue that the use of Big Data and AI for migration governance requires much better collaboration between migrants (including the civil society and grassroots organisations solidarity that represent them), data scientists, migration scholars and policymakers if the potential of these technologies is to be reached in a way that is reasonable and ethical. Numerous critical privacy questions arise are regarding the legal requirements, confidentiality, and rules of engagement as well as the ethical concerns of (mis)use of new technologies. When the secretive nature of the ongoing exploitation of migrant data by states and corporations is considered raising such questions is essential for progress.

Cottone (2025) examines the impact of AI-driven technologies in migration management, focusing on surveillance, biometric identification, and predictive analytics at international borders. He says that while AI-driven technologies enhance border security and streamline administrative processes, they also raise concerns about bias, data privacy, and ethical risks and, if flawed, automated decision-making may lead to wrongful rejections and human rights violations.

## **Research Gap**

Even with growing literature on the issues, there are still major gaps in knowledge. The available empirical data that analyses the real success of AI, its accuracy, and its long-term effects on the migration policy are limited. The current literature does not commonly assess the practical usefulness and precision of AI in border operations and creates a significant gap in the knowledge of the practical results.

## **Research Methodology**

This paper has largely depended on the secondary source materials related to migration, border and Artificial intelligence (AI) through different data databases such as Google Scholars, SAGE Publications and journals, ScienceDirect, SpringerLink etc. Thus, this study is primarily a qualitative one



using a content analysis approach to scholarly literature. The secondary ones are mainly scholarly articles. The process of analysis was:

1. Systematic gathering of scholarly articles related to the use of AI technologies in migration and border management.
2. Recurring themes related to benefits, harms, and governance practices on the use of AI technology at the border were noted down.

**Limitations:** This study utilizes open-source content and is therefore likely to fail in revealing operational details that are classified. In addition, the scope was not quantitative because the access to raw technical metrics was not extensive.

### **Findings and Conclusions**

This paper highlights the results of the study concerning the Artificial Intelligence (AI) in migration and border control and assesses whether its application is as a chance or a danger to global security, governance, and human rights. The analysis is based on the synthesis of the information derived from the scholarly articles based on empirical research which help to arrive at major themes emerging from the use of AI technology in migration and border control. These themes have been categorised into: efficiency and operational effectiveness, ethical and human rights issues, societal and political issues, and the general conclusion on AI as both an opportunity and a threat.(Mr. Ateeq Javed, 2025)

#### **a) Operational effectiveness and Efficiency**

It is found out that AI has improved the efficiency of border management operations to a large extent as it has automated the processes of identity verification, document screening, and threat detection. Facial recognition, fingerprint and behavioural analytics are the systems that minimize human error and manual work. One case in point, the border kiosks sensed with AI have been reported to be faster and more efficient in identifying fake documents at the airports. The prediction of activities is also possible with AI tools, turning suspicious traveling patterns and transnational migration into mistakes observed before any event has taken place.(Mr. Ateeq Javed, 2025)

AI has proven to be a strategic modernization of border management. It facilitates restrictions between real-time information gathering among a multiplicity of agencies and jurisdictions, whereby states may organize the reaction to the unlawful movement, terrorism, and transnational criminal activities. Nonetheless, the research also shows that efficiency gains are also costly. The excessive usage



of the AI systems can lead to the over-reliance on technology being less sensitive to individuals' privacy and human rights. (Mr. Ateeq Javed, 2025)

**b) Ethical and Human Rights Considerations:**

The results indicate that AI technologies are efficient but tend to do so at the prejudice of privacy, fairness, and the dignity of the people. Such gathering and use of biometric and personal information without prior authorization contradicts the principles of the international human rights, such as the right to privacy, which is provided in the Article 12 of the Universal Declaration of Human Rights (UDHR).

The available empirical data shows that AI-driven facial recognition and risk assessment systems often tend to misidentify members of a minority or marginalized groups. These inaccuracies might result in unfair detention, deportation, or rejection, particularly of people of colour and asylum seekers.

The other important conclusion is concerned with dehumanization of border processes. AI implementation makes the interaction of migrants and officials less human-centred and more focused on computer assisted decision-making process. This automation has the potential to dehumanize the migration processes and turn humanitarian interactions into data operations. Ethical issues, thus, do not concern technological bias only but the moral and emotional aspect of the border control. (Mr. Ateeq Javed, 2025)

**c) Societal and Political Implications:**

It is to be noted that there are also far-reaching societal and political consequences of the integration of AI in border control. The application of AI technologies is related to the securitization of the migration process in which human movement is viewed as a threat instead of natural social phenomenon. Moreover, research studies find that AI solidifies inequalities in the world between developed and less developed countries. The rich nations are able to afford highly advanced technologies at the border, whereas the poor countries can turn into the test subjects when it comes to AI prototypes created by corporations and even foreign governments. This interaction increases geopolitical inequality and continues the marginalization of the vulnerable groups.

Further, AI surveillance is a system that makes digital authoritarianism normalized, wherein citizens and non-citizens are constantly monitored. With increasing range of state surveillance through predictive algorithms, a distinction between domestic and international surveillance is diminished. This is a threat to democracy and civil freedoms, since unrestricted AI technologies can be used to support mass surveillance even outside border areas. (Mr. Ateeq Javed, 2025)



#### **d) Artificial Intelligence (AI) as an Opportunity and a Threat**

AI in border control provides both an enormous opportunity as well as a threat. Being an opportunity, it increases efficiency, national security and allows making decisions based on the data, which is capable of preventing criminal operations and human trafficking. The fact that AI can handle high volumes of information within a short time enables states to react promptly to the transnational threat, making the border control more adaptive and smarter.

On the other hand, AI is a serious ethical, legal, and societal threat. It causes a danger of institutionalizing discrimination, losing privacy, and allowing disproportionate surveillance in the name of safety. AI systems can turn out to be the instruments of discrimination and political control instead of safety if appropriate level of control is not maintained. The state of security and liberty is therefore delicate. (Mr. Ateeq Javed, 2025)

#### **Impact of AI Technologies on International Migration Management**

##### **a) Creates digital divide among different countries**

The deployment of AI technologies can deepen digital divide in two main ways. Firstly, it can amplify the so-called digital divide between states with more advanced technological capabilities and those lacking such technologies.

Secondly, the AI divide would also impact international organisations. They could embrace the opportunity to assist less AI-capable states in keeping up with technological advances. Capacity-building programmes and initiatives aiming at stepping up technical support could increase the use of AI technologies. Such a role would not represent a radical change to what many international organisations are doing. For instance, the World Bank has been assisting less developed states with the implementation of digital identity solutions through its ID4D programme. However, there is a risk that international organisations would prioritise an agenda heavily influenced by AI-capable states in matters relating to AI technology. For example, the role of international organisations as conveyers of the Global North's migration management views has been criticised in the literature.

Accordingly, international organisations should maintain their global focus to include the needs and views of less AI-capable states in the future uses of AI technologies in migration management. Without such an approach, international organisations would further support the asymmetric relationship between developed and less developed states in the arena of migration governance. Conversely, by strengthening the technological capacity of the less AI-capable states, international organisations may be able to alleviate the negative effects of an impending AI divide. (Beduschi, 2021)

**b) AI leads to modernising traditional practices**

AI-capable states use AI algorithms to predict the next 'migration crisis' with greater precision, thus foreseeing incoming movements of people based on a variety of available data, including WiFi positioning, big data, Google Trends. The consequences of deploying such technologies are at least twofold.

On the one hand, states could use AI technologies to foresee arrivals and prepare more efficiently for large influxes of people. For instance, decision-makers could use AI algorithms to analyse large amounts of data and identify potential gaps in their reception facilities. These gaps could relate, for example, to the lack of sufficient places for families with children or vulnerable unaccompanied children. Identifying such gaps and acting on them would allow state authorities to prepare and adapt their reception conditions, thus complying with their legal obligations under international human rights law (IHRL).

On the other hand, AI-capable states may be inclined to put measures in place to prevent migrants' and asylum-seekers' arrivals. Regrettably, that would reinforce the existing non-entree policies; in other words, the existing variety of measures aimed at obviating access by migrants and asylum-seekers to a state's territory. Non-entree policies encompass visa controls, carrier sanctions, the establishment of international zones, and maritime interceptions on the high seas. AI technologies could be instrumental for each of these policies, for example, by streamlining visa controls and identity checks in offshore facilities.

Therefore, a way forward for states and international organisations is to adopt a human rights-based approach and conduct human rights impact assessments to verify whether the uses of AI technologies in migration management are not detrimental to migrants' and asylum-seekers' rights. In doing so, they would be able to scrutinise their policies, programmes, and practices to identify and measure the potential harm to human rights. (Beduschi, 2021)

**c) AI calls for evidence-based discourse**

The deployment of AI technologies for international migration management could contribute to the intensification of the contemporary discourse calling for more data-driven and evidence-based policymaking in this area. As AI algorithms are fuelled by data, the more pervasive their use in migration management, the more data they will simultaneously require and produce. Such a situation may strengthen the current trend of 'datafication of migration management'. This formulation refers to the over-reliance on different types of data, including satellite and big data, for migration management and border control.



Accordingly, the increasing calls for more evidence-based policymaking in the field of international migration management go hand in hand with the proliferation of different resources and datasets in the field. Such an abundance of available data on migration can benefit the development of data-powered AI algorithms. The potential surge in the uses of such algorithms would certainly lead to the production of more data on migration, justifying in turn the need for more data-driven policymaking in this area. (Beduschi, 2021)

#### **d) AI risks demand addressing design and implementation challenges**

First, there are concerns about data quality of AI algorithms. It is generally accepted that poor data quality used for training AI algorithms can produce equally poor outcomes. For instance, IBM's AI Watson failed to provide cancer identification as it could not interpret medical language, local acronyms, and consultation notes. In other words, the attributes needed for such identification were not found in the categorical structured data that Watson was using at the time.

Secondly, there are important concerns about the data privacy when applied to migration matters. It is well established that in principle, individuals enjoy the same rights online as well as they do offline, including the right to privacy or the respect for one's private life. The right to respect for one's private life encompasses telecommunications and electronic data. Non-nationals' data privacy must also be protected insofar as they fall within the jurisdiction of a state party to a human rights treaty recognising this right.

Thirdly, there are critical issues with algorithmic accountability and fairness. AI algorithms may one day become instrumental in, for example, declining one's visa application or matching a migrant's identity to that of a suspected terrorist-and do so without a clear explanation about how machine reached such a decision. This situation may arise in part because algorithms can be trained using unsupervised learning, in which case the machine can learn by itself, identifying patterns and making predictions that do not necessarily follow what a human would do. These 'thought processes' are not explainable by humans, not even by those who have designed the algorithms at the very beginning of the training process. Such a system thus creates considerable unpredictability and opacity, making it harder to understand how decisions that can have a crucial impact on one's human rights were made.(Beduschi, 2021)

#### **Conclusion**

This paper has dealt with the implementation of Artificial Intelligence (AI) in border control which grapple with the issues between innovation and ethical issues.

On the one hand, AI technologies have increased the efficiency, accuracy and responsiveness of the process of managing the border dramatically. Robotics identity checks, predictive analytics and data-



driven surveillance have helped states to facilitate the immigration process and more efficiently react to transnational dangers. These innovations are a significant technological breakthrough in the intensification of world border control. Nonetheless, this paper has also attempted to highlight that AI advantages are associated with massive ethical and governance issues. Biometric data and opaque algorithms as well as predictive profiling have become a significant challenge to the privacy of individuals and human dignity. Moreover, the results of algorithmic biases have been discriminatory, especially towards minority groups and asylum seekers, which contradicts the principles of fairness and justice. The absence of multilateral laws and systems of accountability has facilitated unmitigated application of AI in the framework of national security discourses. (Mr. Ateeq Javed, 2025)

Thus, AI is efficient and safe but, at the same time, it can lead to the infestation of digital authoritarianism and the legalization of inequality. Ultimately, the implementation of AI in border control is a game changer as well as a significant threat. It could make border security and administration more effective, but without strong ethical protection and governance systems, it is likely to undermine basic human rights. (Mr. Ateeq Javed, 2025). The future of AI in this area should thus be steered by the pledge of transparency, inclusivity, and governance based on people and make sure that the technological development is at the service of humanity and not its master.

It can be stated that AI divide can contribute to deepening asymmetries between states in so far as international migration management is concerned. It can create a Global North-South paradigm. International organizations will conceivably continue to play a crucial role in assisting less AI-capable states in keeping up with the technological advances, thus contributing to bridging the AI divide.(Beduschi, 2021)

It is also noted that the development of AI technologies for international migration can reinforce old practices in the field of international migration management. For instance, it can provide new tools to strengthen existing non-entree policies and unlawful non-refoulement state practices. As noted earlier, AI technologies can be used to assist states in maritime interventions aiming to return migrants and asylum-seekers to unsafe countries and territories. AI thus can become another political tool for curbing international migration and preventing arrivals. However, if there is enough political will, AI technologies can also assist states and international organisations in preparing for large movements of people. For example, AI can do so by predicting the new 'migration crisis' and using this information to allocate resources better and improve reception conditions.(Beduschi, 2021)

It is to be observed that AI will possibly amplify calls for more data-driven evidence-based policy-making in this field. Given that AI algorithms are powered by data from diverse sources, including



big data, the more they are used in migration management, the more they will require and produce new datasets. While evidence-based policy making is, in principle, a good practice, it also encompasses important challenges. In particular, it is important to clarify what counts as 'evidence' in evidence-based policy-making. Due to the complex nature of migration, both quantitative and qualitative datasets, such as those collected by independently funded academic research projects, should also be taken into consideration. Moreover, both types of datasets should be used to train AI algorithms for use in migration management. In this way, these new AI tools will be able to depict a fuller picture of migration and go beyond a purely numerical view of the migratory phenomenon.(Beduschi, 2021)

In a nutshell, while international migration management is likely to be influenced by the developments in AI technologies, policymakers should not succumb to the hype surrounding AI without a comprehensive consideration of its implications. International migration is a complex and context-dependent phenomenon. AI alone is not a panacea, and it cannot provide a one-size-fits all model for international migration management. Policymakers should thus consider all these aspects if they want to make sense of international migration management in the age of AI.(Beduschi, 2021)

### **Recommendations**

1. Ethical principles should be embraced by governments and international bodies in the application of AI in border control, which should focus on fairness, accountability, and transparency. Such frameworks ought to be legally enforceable as opposed to being advisory.
2. Migration and border screening AI systems should be capable of being explained and audited. The access to the principles of algorithms design and the control by independent experts should be required so as to avoid abuse.
3. Artificial intelligence can be used to supplement human judgement and not to substitute it. The final decision making power should remain with the border officials to prevent accountability and empathy failure in the enforcement.
4. There should be clear policies regarding the data collection, storage and sharing. The collection of biometric and personal data should be performed with an informed consent and with high standards of data protection.
5. Discrimination in AI systems should be reduced with the help of regular audits and a variety of data training sets. Hidden biases can be tackled by inclusion of multidisciplinary teams, particularly ethicists, sociologists, and human rights gurus.



6. The international governance of AI at the borders should be supported by multilateral institutions like the UN and IOM to enable worldwide discussion and establish a standard of ethical practice that all states should follow.
7. Digital literacy, ethics, and human rights training ought to be incorporated in the border personnel training programs to promote a responsible application of AI tools.
8. The use of AI systems in border operations should be monitored and evaluated by independent regulatory bodies to ensure that AI systems comply with ethical standards.
9. Lastly, AI border systems should maintain humanitarian principles and should treat migrants and refugees with dignity, compassion, and fairness. (Mr. Ateeq Javed, 2025)

### Limitations and Future Research

This paper is based on the open-source documentation and is therefore not able to encompass the practices that are classified. Further studies ought to make empirical performance assessments utilizing audit records, examine the long-run socio-political efforts of biometric regimes on cross-border societies, and examine participatory governance frameworks that consider the affected groups.

### References:

- Everuss, L. (2021). AI, smart borders and migration 1. In *The Routledge Social Science Handbook of AI* (pp. 339-356). Routledge.
- Nalbandian, L. (2022). An eye for an 'I': a critical assessment of artificial intelligence tools in migration and asylum management. *Comparative Migration Studies*, 10(1), 32.
- Javed, M. A., Aftab, R., & Azeez, I. A. A. (2025). Artificial intelligence (ai) in border control: opportunity or threat? An analysis of artificial intelligence practices in controlling border. *Spectrum of Engineering Sciences*, 646-655.
- Bircan, T., & Korkmaz, E. E. (2021). Big data for whose sake? Governing migration through artificial intelligence. *Humanities and Social Sciences Communications*, 8(1), 1-5.
- Cottone, L. (2025). Border Boundaries: Navigating Migration and the Role of AI in Irregular Movements. *Journal of Artificial Intelligence & Cloud Computing*, 4(2), 1-6.
- Beduschi, A. (2021). International migration management in the age of artificial intelligence. *Migration Studies*, 9(3), 576-596.



- Rinaldi, A., & Teo, S. A. (2025). The use of artificial intelligence technologies in border and migration control and the subtle erosion of human rights. *International & Comparative Law Quarterly*, 74(1), 61-89.
- McAuliffe, M., Blower, J., & Beduschi, A. (2021). Digitalization and artificial intelligence in migration and mobility: Transnational implications of the COVID-19 pandemic. *Societies*, 11(4), 135.
- Ozkul, D. (2023). Automating immigration and asylum: The uses of new technologies in migration and asylum governance in Europe.
- Amooore, L. (2024). The deep border. *Political Geography*, 109, 102547.
- Latonero, M. (2018). Governing artificial intelligence: Upholding human rights & dignity. *Data & Society*, 38, 1-38.
- Engstrom, D. F., Ho, D. E., Sharkey, C. M., & Cuéllar, M. F. (2020). Government by algorithm: Artificial intelligence in federal administrative agencies. *NYU School of Law, Public Law Research Paper*, (20-54).
- Molnar, P. (2019). Technology on the margins: AI and global migration management from a human rights perspective. *Cambridge International Law Journal*, 8(2), 305-330.
- Chouliaraki, L., & Georgiou, M. (2022). *The digital border: Migration, technology, power* (Vol. 44). NYU Press.
- Aradau, C. (2023). Borders have always been artificial: Migration, data and AI. *International Migration*, 61(5).
- Vavoula, N. (2021). Artificial Intelligence (AI) at Schengen borders: automated processing, algorithmic profiling and facial recognition in the era of techno-solutionism. *European Journal of Migration and Law*, 23(4), 457-484.
- Burton, J. (2023). Algorithmic extremism? The securitization of artificial intelligence (AI) and its impact on radicalism, polarization and political violence. *Technology in society*, 75, 102262.
- Wörsdörfer, M. (2024). Mitigating the adverse effects of AI with the European Union's artificial intelligence act: Hype or hope? *Global Business and Organizational Excellence*, 43(3), 106-126.
- Barkane, I. (2022). Questioning the EU proposal for an Artificial Intelligence Act: The need for prohibitions and a stricter approach to biometric surveillance. *Information Polity*, 27(2), 147-162.
- Latonero, M. (2018). Governing artificial intelligence: Upholding human rights & dignity.



- Goldfarb, A., & Trefler, D. (2018). Artificial intelligence and international trade. In *The economics of artificial intelligence: an agenda* (pp. 463-492). University of Chicago Press. *Data & Society*, 38, 1-38.
- ANDERSON, D., BELCINEANU, A. I., & TZVETKOVA, M. (2025). AI for Border Management and Customs Controls.
- Tyler, H. (2022). The increasing use of artificial intelligence in border zones prompts privacy questions. *Migration Policy Institute*.