

**THE LEGAL USE OF ARTIFICIAL INTELLIGENCE IN INTERNATIONAL
MIGRATION MANAGEMENT IN A DIGITAL AGE.**

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ABSTRACT

Artificial intelligence has the potential to revolutionise the way states and international organisations seek to manage international migration. It is gradually going to be used to perform tasks, including identity checks, border security and control, and analysis of data about visa and asylum applicants. To an extent, this is already a reality in some 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. The article's central hypothesis is that AI technology can affect international migration management in three different dimensions: by deepening the existing asymmetries between states on the international plane; by modernising states and international organizations traditional practices; and by reinforcing the contemporary calls for more evidence-based migration management and border security. The paper examines each of these three hypotheses and reflects on 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. Most particularly, the article contributes to the current debate about the future of international migration management, informing policymakers in this area of growing importance and fast development.

Keywords: Artificial Intelligence, Migration, International Law, Management

INTRODUCTION

Artificial intelligence (AI) technology is increasingly used in public and private domains to perform tasks usually associated with human intelligence, such as the ability to learn from data, the capacity to recognise images and speech and process natural language (Nilsson 2014; Ertel 2018). The focus on such technologies is not recent though Alan Turing investigated the potential for machines to think already in 1950 (Turing 1950), and AI as a discipline was initiated in 1956 with the Dartmouth Summer Research Project on Artificial Intelligence (Moor 2006). Since then, the exponential increase in computational power combined with the availability of large quantities of data ignited the contemporary surge in interest for AI (Russell and Novig 2010). To date, no machine has passed the Turing test, and it thus remains to be seen whether one day a computer will be able to think like a human being (Turing 1950). Still, references to AI, machine learning, and algorithms have progressively permeated the social sciences and humanities scholarship (Crawford and Calo 2016; Calo 2017; Kitchin 2017).

AI is understood here as a growing resource of interactive, autonomous, self-learning agency, which enables computational artifacts to perform tasks that otherwise would require human intelligence to be executed successfully' (Taddeo and Floridi 2018: 751). Simply put, AI is 'a set of techniques aimed at approximating some aspect of human or animal cognition using machines' (Calo 2017: 404). One of these techniques is machine learning or 'the systematic study of algorithms and systems that improve their algorithms' knowledge or performance with experience' (Flach 2012: 3). AI thus refers to technologies that perform tasks usually associated with humans and act intelligently by learning from data with the aid of algorithms sets of instructions used to solve problems. 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 a human being would be capable of doing.

Artificial Intelligence algorithms draw on vast amounts of data, including big data, to learn and make inferences about patterns and future behaviour. Big data, or the high velocity,

complex and variable data, has great potential to be used in forecasting and managing migratory flows. AI algorithms are said to increase efficiency by streamlining repetitive tasks, notably those that require the review of large amounts of paperwork (Chui et al. 2018). AI thus has the potential to revolutionize the way states and international organizations seek to manage international migration. AI is gradually going to be used to perform tasks, including identity checks, border security and control, and analysis of data about visa and asylum applicants (Chui et al. 2018). To an extent, this is already a reality in some countries such as Canada, which uses algorithmic decision-making in immigration and asylum determination (Molnar and Gill 2018), and Switzerland, which is currently testing an algorithm to improve refugee integration (Bansak et al. 2018). In the European Union, the revised Schengen Information System will be using facial recognition, DNA, and biometric data to facilitate the return of migrants in an irregular situation (Regulation 2018/1860). These examples illustrate well the current trend of increasing reliance on new technologies, including AI, for international migration management and border security.

Against this background, the article examines the role of AI technologies on international migration management. Migration management is understood as the different strategies, policies, processes, and procedures negotiated and adopted by relevant actors at the international level to provide a framework to manage migratory flows in an orderly and predictable manner. This notion thus directly relates to that of migration governance but has a narrower scope (Crépeau and Atak 2016). Migration management is a contested notion. As Castles notes, the political will and assumed capacity to manage migratory flows is often contradicted by reality, as migration is a complex phenomenon that cannot be easily managed (2004b: 214). Still, states and international organizations have made it clear that they wish to ‘manage large movements of people’ through the ‘implementation of planned and well-managed migration policies (New York Declaration for Refugees and Migrants 2016). Therefore, the article focuses specifically on the role of Artificial Intelligence in easing

international migration management. This choice is justified by the growing uses of AI technologies by states and international organizations in the field of international migration.

Concept of Artificial Intelligence

Artificial intelligence **is** the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience. Since the development of the digital computer in the 1940s, it has been demonstrated that computers can be programmed to carry out very complex tasks.

However, decades before this definition, the birth of the artificial intelligence conversation was denoted by Alan Turing's seminal work, "Computing Machinery and Intelligence, which was published in 1950. Turing, often referred to as the "father of computer science", asked the question, Can machines think? He came out with a test, famously known as the "Turing Test", where a human interrogator would try to distinguish between a computer and human text response. While this test has undergone much scrutiny since its publication, remains an important part of the history of AI. Since the term was first coined in 1956, AI has gone through different definitions. The term artificial intelligence was first used at the second Dartmouth conference organized by John McCarthy, one of the founding fathers of AI. Most definitions of AI revolve around simulation of intelligent behavior by computers.

According to Anand, Artificial Intelligence as a continuum consists of: Assisted intelligence — where AI has replaced many of the repetitive and standardized tasks done by humans. Augmented intelligence — where humans and machines learn from each other and redefine the breadth and depth of what they do together. Autonomous intelligence — where adaptive/continuous systems take over in some cases (Anand S Rao 2016). However, one of the most popular AI textbooks provided a more precise definition by Stuart Russell and Peter Norvig published a book, *Artificial Intelligence, A Modern Approach*, define AI as the designing and building of intelligent agents that receive percepts from the environment and

take actions that affect that environment. This view of AI brings together a number of distinct subfields of computer vision, speech processing, natural language understanding, reasoning, knowledge representation, learning, and robotics, with the aim of achieving an outcome by the machine (Stuat J Russell and Peter Norvig 1995).

Artificial Intelligence is increasingly used throughout the Migration Cycle, for example, to facilitate pre-departure identity checks, support online visa applications, manage administrative decision-making, enable smart border processing, and produce data analytics on travelers' compliance with legal frameworks. Systems that think like humans, systems that act like humans, systems that think rationally and systems that act rationally Alan Turing's definition would have fallen under the category of systems that act like humans.

Concept of Migration Management

It is important at this juncture to know the meaning of migration before delving into the concept of migration management. Migration is the movement of people from one place to another. Migration can be within a country or between countries. Migration can be permanent, temporary or seasonal. Migration happens for a range of reasons. These can be economic, social, political or environmental, religious. Push and pull factors drive migration. Migration impacts both the place left behind and the place where migrants settle. These impacts can be both positive and negative, however, it is not within the purview of this article to discuss the negative or positive aspects of migration but we focus on management of migration.

Migration management is a term used to encompass numerous governmental functions within a national system for the orderly and humane management of cross-border migration, particularly managing the entry and presence of foreigners within the borders of the State and the protection of refugees and others in need of protection. It refers to a planned approach to the development of policy, legislative and administrative responses to key migration issues (Eteri Rubinskaya 2020).

Migration occupies a very central place in the regional integration process. In order to realise the core objectives of the free, safe and orderly movement of persons - migration has

to be effectively managed. Migration is also intrinsically tied to migration challenges such as irregular migration, human smuggling and human trafficking and other cross border crimes like car theft, armed robberies and fugitives' migration. At the same time, migration across borders provides opportunities such as increased legal labour migration which has a positive impact on remittances, transfer of technology and increased cross-border trade, which benefit both the receiving and sending countries. To that extent, migration has to be managed in a manner that reduces the negative effects and maximises on the positive aspects.

As a process, therefore, migration comprises stages, actors, policy considerations, stakeholders' partnerships and several other post-migration elements. In order to maximise the development potential of migration, a planned, organised and coordinated approach to the management of migration is necessary. In the second half of the twentieth century, globalization processes combined with sweeping changes in global political and economic systems led to a drastic intensification of interstate territorial movements of people and the formation of fundamentally new global patterns of migration. For example, for the last half century, the total number of classical international migrants in the world increased by more than three times from 75.46 million people in 1960 to 232 million in 2013 (United Nations Department of Economic and Social Affairs Report September 2013). If we add here other categories of migrants (migrant workers together with their family members, undocumented migrants, pendulum migrants, seasonal and border workers, forced migrants and economic tourists, *i.e.* migrants who are involved in the business connected with crossing of a border using a tourist visa), then the total number of inhabitants of the globe participating in international migration exceeds 1.2 billion people. Thus, international migration became one of the global phenomena affecting all aspects of the community life and world politics.

Thus, a logical question has arisen about whether this phenomenon can be managed? To answer this question, it is necessary to identify the management of social phenomena. In our opinion, this term can be described by a simple formula: forecast plus policy. And in reality to manage effectively a social phenomenon or process means both to understand clearly the

current developmental trends of the process and also to conceive its prospects. The latter also allows forecasting migratory processes which are often connected with demographic forecasting, especially when we talk about the analysis of the world population, and its regional and national distribution.

According to forecasts by UN experts, the world population will amount about 9.7 billion people by the year 2050 and by the end of this century 11 billion compared with 7.2 billion in 2014. By the same period of time, the number of classical migrants in the world will double and exceed 450 million people. If we speak about all categories of migrants, the number, by our estimates, will approximately triple and amount 3 billion people (UN Report 17th June 2019, New York)

The use of Artificial Intelligence to manage migration matters, with reflections on key strategic challenges and opportunities in this important area of new technology is necessary. While AI can certainly bring about a series of advantages for policy and practice, there are a range of risks to State and non-State actors including migrants that need to be carefully managed, especially from regulatory and human rights perspectives.

Experiments with new technologies in migration management are increasing. From big data predictions about population movements in the Mediterranean, to Canada's use of automated decision-making in immigration and refugee applications, to artificial-intelligence lie detectors deployed at European borders. States are keen to explore the use of new technologies, yet often fail to take into account profound human rights ramifications and real impacts on human lives. These technologies are largely unregulated, developed and deployed in opaque spaces with little oversight and accountability.

Technology is not inherently democratic and human rights impacts are particularly important to consider in humanitarian and forced migration contexts. An international human rights law framework is particularly useful for codifying and recognising potential harms, because technology and its development is inherently global and transnational. More oversight and issue-specific accountability mechanisms are needed to safeguard fundamental rights of

migrants such as freedom from discrimination, privacy rights and procedural justice safeguards such as the right to a fair decision-maker and the rights of appeal. Over-reliance by countries on artificial intelligence to tackle international migration and manage future migration crisis could lead to serious breaches of human rights. Artificial Intelligence can help states and international organisations prepare for large movements of people, and improve reception conditions. But it should not be used to reinforce unlawful practices, bar entry and discrimination.

The Role of Artificial Intelligence in Migration Management

The following are the roles of artificial intelligence in international migration management for ease of records and identification of migrants.

Processing migration visa applications: Using artificial intelligence for processing visa applications is faster than using human beings for manual processing. For instance, over a decade, Hong Kong's Immigration Department has been using eBrains, an award-winning AI technology that uses to process visa applications. AI technology provides decision support for millions of annual visa applications.

Preventing irregular migration: There is evidence of a growing capacity to use Artificial Intelligence in border control and border management as part of an expanding security market that in Europe alone is predicted to be worth \$146bn by 2020⁹⁹ (J Eager et al 2020 Policy Department for Economic, Scientific and Quality life policies June 2020). In October 2018, the European Union announced it was funding a new automated border control system to be piloted in Hungary, Greece and Latvia. The system, called iBorderCtrl, uses smart lie-detecting avatars to question travelers seeking to cross borders.

Labour market polarisation: As automation replaces human labour across entire national economies, thereby impacting the international economy, the net displacement of workers by machines might exacerbate the gap between returns to capital and returns to labour. This will lead to an increasing segregation, or polarisation, of the job market into low-skill pay, and high-skill pay sectors, and a deeper hollowing out of middle-income jobs.

Use of Artificial Intelligence in border control and Security: *The use of artificial intelligence in border control has sparked a debate over ETIAS and the role AI will play in their processes: what screening technologies are involved when entering Europe and other countries.* Despite being widespread throughout the western world, the use of artificial intelligence continues to be a cause for debate, particularly when it comes to facial recognition and the monitoring of an individual's movement. Whilst some applaud the ability of AI to offer a level of security that humans alone cannot attain, others express concerns regarding the collection and use of personal data by robotics.

However, when used properly and for legitimate purposes, AI is extremely useful and is helping society make advances in important areas such as law enforcement in migration management. For instance, European Union has embraced machine intelligence as an unbeatable mechanism in tackling the ongoing global challenges of terrorism and human and drug trafficking whilst abiding by its own guidelines for trustworthy AI published by the Commission in April 2019.

AI in detecting criminals using facial recognition: Interpol, the organization that facilitates global police cooperation, has long used facial recognition to identify criminals. The effectiveness has been proven in a number of high-profile cases. In 2018 an internationally wanted murder suspect was caught after an image of the individual was compared against records held in Interpol's facial recognition database. Whilst the use of facial recognition for remote identification is currently only used in exceptional circumstances, the European Commission released a White Paper in February 2020 with a framework for more widespread use of trustworthy AI in the future. It is possible that facial recognition could be expanded and used as a highly effective tool for stopping dangerous foreigners from entering countries they are not wanted.

Biometrics, smart borders and machine intelligence: To meet world, travelers need a biometric passport should be use. A biometric passport contains all the biographical information found in a machine-readable document in addition to certain biometrics. This

biometric data will be used by the Entry-Exit System, a key component to prevent irregular migration and protect citizens. By registering the arrival and departure passengers, nationals, Entry and Exit System will employ biometrics to identify overstayers and prevent identity fraud.

Artificially intelligent lie detectors at borders: Artificial Intelligence guards provide a more secure solution to border control than human officers thanks to their ability to detect: Suspicious movement pattern and pick up on body language indicating deception

AI use in identifying unusual movement: Visiting the same country on many occasions, each time with different children, AI border guards can help apprehend people involved in organized crime such as human trafficking. Another interesting development is the ability of AI to spot non-verbal communication which suggests that someone is lying. AI technology has proven to be effective in detecting lies using cues such as facial expressions and shifting backward and forwards, something which may be difficult for humans to pick up on. For example, there is increased use of AI at Schengen Area exterior borders which will not only boost security but also reduce waiting times: smart gates are generally faster and more efficient than the manual alternative.

Keeping Travel Data Safe and Secure: European Travel Information and Authorisation System (ETIAS) is managed by the agency eu-LISA, which is dedicated to keeping details safe. State-of-the-art technology will be used to encrypt personal data, protecting it from cyber-attacks and identity theft. In line with the EU's principle to protect the fundamental right to privacy, the information collected by ETIAS systems will only be accessed by authorized personnel, such as border authorities or police officers, when necessary. Travelers closely linked to developments in AI will be safe than compromising security. Digitalization will make the world safer than ever before for residents and visitors alike. This can apply to other countries of the world in the use of AI.

Use of Artificial Intelligence at Sea borders patrol: Sea borders tend to be more difficult to patrol than land borders, so the European Union is particularly interested in technologies to

monitor the Mediterranean Sea. The area has been an issue of prime concern following the refugee and migration crisis of 2015-16, and leaders have since repeatedly rallied around Member States' efforts to halt irregular crossings. Notably, Roboder was conceived to detect environmental threats in addition to irregular migration and smuggling. In its first real-world demonstration, the AI technology successfully detected a simulated oil spill off the coast of Portugal by using flying and submarine drones that combined imaging with fluorimeter technology.

Quest for Universal Legal Regime for Artificial Intelligence in Migration Management

It is important from the onset to note that technology OutSpace regulation. Despite the rapid expansion into border zones and fast uptake by border control agencies, regulations and guidelines for the deployment of AI have been slower to evolve. In April 2021, the European Union released the first ever legal framework for AI in an attempt to regulate the technology before it becomes even more mainstream. Crucially, the proposal for harmonized rules specifically mentions AI systems in migration, asylum, and border control, claiming these processes can affect particularly vulnerable people. International regime will ensure accuracy, non-discriminatory nature, and transparency of AI systems in ensuring that the rights of vulnerable populations are protected.

Lack of rules that would impact major technology companies and insufficient focus on people affected by AI systems. Human Rights Watch has called attention to significant exemptions for law enforcement and migration control authorities in requirements to disclose how technologies work. Although the legal framework was viewed by many as path-breaking, the European Union excludes migrants from protections afforded to European Union citizens, this is already discriminating and bias . Still, the proposed regulation was broadly lauded in many spheres as a welcome and necessary step that could become a model globally.

The United States is yet to release a similar comprehensive framework, though there are signals from the Biden administration that AI regulation is taking shape.

Legally speaking, travelers and migrants are often afforded very different rights than residents or citizens, civil liberties and privacy advocates have raised legitimate worries about possible creep of technologies from the border. Ambiguity about the limits of border zones and the expanding use of AI are matters of serious concern. As promising as advanced technologies may assist in speeding travel, halting smuggling, and identifying environmental disasters, they may also have serious unforeseen risks that cannot be ignored.

AI technologies may be used to perform tasks including identity checks, border security and control, and analysis of data about visa and asylum applicants in a way which can cut costs and increase efficiency. This requires uniform rules, regulation and Laws to be enforced. This will make the process quicker and easier for migrants and asylum seekers. AI could also help countries to spot potential gaps in their reception facilities, adapting them to comply with their legal obligations under international human rights law. This will assist targeted maritime interventions aiming at returning migrants and asylum-seekers to places where they may fear for their lives or freedom may be at risk.

Artificial Intelligence is at risk of becoming another political tool, used to reinforce old state practices, aiming to curb international migration and prevent asylum-seekers from reaching their territories. The technology may bring innovation, reduce costs, and build more effective systems for international migration management. However, it is important that such tools are developed and deployed within ethical and legal frameworks, in particular international human rights law.

Challenges in the use of Artificial Intelligence

Computing Power: The amount of power these power-hungry algorithms use is a factor keeping most developers away. Machine Learning and Deep Learning are the stepping stones of this Artificial Intelligence, and they demand an ever-increasing number of cores and GPUs to work efficiently. They require a supercomputer's computing power, and supercomputers are not cheap. Not everyone can afford that with an increase in the inflow of unprecedented amounts of data and rapidly increasing complex algorithms (Pavan Vandalpalli Jan.8, 2021)

Limited Knowledge: One of the most important factors that are a cause of worry for the AI is the unknown nature of how deep learning models predict the output. How a specific set of inputs can devise a solution for different kinds of problems is difficult to understand for a layman. Many people in the world don't even know the use or existence of Artificial Intelligence, and how it is integrated into everyday items they interact with such as smartphones, Smart TVs, Banking, and even cars at some level of automation. The real problem is the knowledge of Artificial Intelligence.

Human-level: This is one of the most important challenges in AI, one that has kept researchers on edge for AI services in companies and start-ups. These companies might be boasting of above 90% accuracy, but humans can do better in all of these scenarios. For example, model predict whether the image is of a dog or a cat. The human can predict the correct output nearly every time, mopping up a stunning accuracy of above 99%.

Data Privacy and Security: The main factor on which all the deep and machine learning models are based on is the availability of data and resources to train them. There is data, but as this data is generated from millions of users around the globe, there are chances this data can be used for bad purposes.

Problem of bias: The good or bad nature of an AI system really depends on the amount of data they are trained on. Hence, the ability to gain good data is the solution to good AI systems in the future. But, in reality, the everyday data the organizations collect is poor and holds no significance of its own. They are biased, and only somehow define the nature and specifications of a limited number of people with common interests based on religion, ethnicity, gender, community, and other racial bias.

Data Scarcity: With major companies such as Google, Facebook, and Apple facing charges regarding unethical use of user data generated, various countries such as India are using stringent IT rules to restrict the flow. Thus, these companies now face the problem of using local data for developing applications for the world, and that would result in bias.

Conclusion

Inevitably, mixed migration will be affected in different ways by the radical innovations brought about by AI. While some changes may benefit migrants and refugees, others might not. To date, it is hard to see any balance between the advantages and disadvantages; instead, as global and regional inequalities widen. The development of AI technologies will likely impact international migration management in its three substantive dimensions. The relationships between the key actors, their practices, and the discourses shaping international migration management.

Recommendations

- i. Comprehensive migration governance in the use of Artificial Intelligence This aspect has a strong practical character, since it goes through the standardization of procedures and migration processes, and the strengthening of border management. In addition, implementation of strategies to exchange information for the regional generation of data that allow an international treatment of the migratory phenomenon should be encouraged.
- ii. Labor migration: Through the implementation of regional and bilateral agreements it is possible to promote circular and orderly labor migration flows. International cooperation in this area also favors the creation of mechanisms that strengthen the protection of labor rights for migrants.
- iii. Social integration: The actions between States allow greater integration of migrants and their families in the countries of destination, as well as returnees. Promoting actions at a regional level that recognize the positive contributions of migrants helps reduce prejudice and xenophobic actions towards these groups of people.
- iv. Trafficking in persons and migrant smuggling: It is essential to combat these crimes in coordination with the relevant regional bodies, but it is also necessary to strengthen the information and statistics system for a deeper understanding of

how migrant smuggling and trafficking in persons work, their areas of action and main victims, among other characteristics. SICA also aims to promote the consolidation of the Regional Coalition's work against these crimes.

- v. Comprehensive management of migratory crises: Regardless of the migratory status of a person, it is necessary to provide humanitarian assistance when someone needs it. This includes food, water, sanitation, shelter, health and safety care, and psychosocial support. The strengthening of mechanisms that allow the temporary or permanent protection of migrants, especially the most vulnerable, is a job that requires international cooperation to be effective;
- vi. Accepting States should take measures to protect fundamental human rights of all immigrants in their territory and ensure the respect for their cultural identity and measures should be taken to provide integration of immigrants and population of accepting countries;
- vii. States should take into account not only economic and social interests of their own countries, but also the issues of the wellbeing of immigrants and their families, and also demographic implications of migration;
- viii. States and International Organizations should try to find long-term solutions to the problems connected with refugees and movement of refugees, and to work in the direction of elimination of the causes of these problems by using AI effectively.

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