

# The Algorithmification of Migration: A Case Study Exploration

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In our contemporary social landscape, algorithms increasingly permeate various interactions—a trend expected to intensify in the foreseeable future. This omnipresence has profound implications for global migration policies which carry potential impacts on the lives of migrants and refugees. This process, which may be labeled as the “algorithmification of migration,” represents a paradigm shift where algorithms not only inform but also shape decision-making in migration. This study explores the use of algorithms in migration, employing a case study methodology focused on two entities: the United Nations High Commissioner for Refugees (UNHCR) and the U.S. government. The article discusses how algorithms are woven into migration policies, revealing their impact and challenges. The selection of the UNHCR and the U.S. government as case studies is based on their prominence and pivotal roles in global migration policies. The UNHCR, as an international organization dedicated to refugee well-being, offers insights into the intersection of technology and humanitarian efforts. The U.S. government provides perspectives on algorithmification within a national policy framework and its geopolitical implications.

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## Algorithms and AI Systems in Migration

The integration of artificial intelligence (AI) and digital technologies into the landscape of migration and asylum management is a growing phenomenon embraced by governments and international organizations. Algorithms, in particular, assume various migration-related activities, including identity verification, border security, and the processing of visa and asylum applications (Beduschi, 2022). This transformative process, which may be termed the “algorithmification of migration,” holds both the potential for improving efficiency and compromising ethical principles.

Drawing attention to these challenges, Nalbandian (2022) voices concerns about the potential misuse of collected data and the ethical and legal considerations embedded in AI-driven operations. Notable instances of the algorithmification of migration, as highlighted by Nalbandian, involve initiatives by the United Nations High Commissioner for Refugees (UNHCR), the governments of New Zealand, and the U.S. The UNHCR, for example, uses a biometric matching engine powered by AI to streamline access to identification documents for refugees and asylum seekers.

The New Zealand government, on the other hand, uses operational algorithms for border security and immigration processes, employing biometric and biographic matching, customer segmentation, screening, alerts, watchlists, and case prioritization, all powered by AI. This operational approach introduces concerns related to potential biases and discrimination, as algorithmic decisions may be influenced by biased training data. Moreover, there is a growing concern regarding the erosion of human decision-making in crucial immigration matters, exacerbated by inadequate legal frameworks that result in uncertainties regarding the legality of certain algorithmic practices.

Similarly, in the United States, AI, coupled with a biometric database and data scraping technology, is used to track, locate, and deport undocumented migrants (Nalbandian, 2022). This deployment raises ethical concerns regarding human rights, potential inaccuracies, and biases. The lack of transparency and accountability in algorithmic decision-making poses a barrier to individuals challenging decisions, impacting the due process, as outlined by Beduschi and McAuliffe (2021).

Beyond these immediate concerns, the algorithmification of migration also introduces geopolitical implications, as highlighted by Beduschi (2021). This trend has the potential to worsen existing technological divides between the Global North and Global South. The emergence of what could be called “AI-haves” and “AI have-nots” highlights the disparities in access to and adoption of advanced AI technologies. The Global North, equipped with technological infrastructure and abundant resources, may wield greater influence in shaping and implementing algorithmic migration policies. Conversely, the Global South, grappling with resource constraints and potential exclusion from advanced AI capabilities, could find itself in a position of relative disadvantage. This technological divide not only impacts the fairness and inclusivity of migration policies but also raises questions about power dynamics and the potential for asymmetric geopolitical influence in the development and deployment of AI-driven solutions on a global scale.

However, amid these challenges, AI also presents an opportunity for positive and constructive purposes in migration. This assertion does not imply a critique of the current utilization of AI by other entities discussed here; rather, it highlights the need for heightened circumspection. The work of the Immigration Policy Lab serves as an example for leveraging AI to design evidence-based immigration policies that benefit both immigrants and host countries. The GeoMatch tool, developed by Jennifer Fei and her team at the lab, stands out as a positive integration of AI in migration. This tool employs human-centered AI to collaboratively design, test, and scale an algorithm-based solution for matching new immigrants to locations where they are likely to thrive. By identifying synergies between immigrants’ personal characteristics and potential destinations, GeoMatch aims to enhance the success and well-being of newcomers in various locations, showcasing the beneficial applications of AI in the realm of migration policy (Immigration Policy Lab, 2021). Therefore, the algorithmification of migration should not be perceived entirely in a negative light but rather calls for a balanced approach that recognizes both the capabilities and limitations of AI systems.

### **Case Study: United States Immigration System**

The integration of algorithms and AI systems into the U.S. immigration landscape has sparked widespread debate and ethical concerns. A notable instance, as highlighted by Matyus (2020), is a controversial practice employed by the U.S. Immigration and Customs Enforcement (ICE). Specifically, facial recognition software is utilized on driver’s licenses issued to undocumented

immigrants in Maryland. Despite the state's 2013 legislation permitting special licenses for undocumented immigrants, ICE engages in the unauthorized use of facial recognition on these licenses, operating without court approval. This practice raises significant ethical questions as it has the potential to compromise the privacy and civil liberties of over 275,000 immigrant license holders.

In another example, Beduschi and McAuliffe (2021) shed light on the proliferation of AI technologies in border detection systems and behavioral analysis in public spaces in the U.S. The use of AI-backed drone technology for border surveillance, coupled with machine learning on facial expressions and physical movements, introduces concerns about accuracy, intrusiveness, and privacy. The controversial "virtual border wall" project between the U.S. and Mexico, orchestrated by the Customs and Border Protection (CBP), further amplifies these concerns through mass surveillance via drones and towers equipped with capabilities like Google's Vision AI product. The virtual border between the US and Mexico is a network of sensors, cameras, drones, and artificial intelligence that aims to monitor and deter illegal crossings along the 2,000-mile border. It is controversial due to its estimated billions of dollars cost, technical challenges, and delays in implementation, with critics arguing that it is a costly endeavor that fails to address the root causes of migration. Moreover, concerns about human rights and privacy are raised, as activists claim the virtual border acts as a surveillance system violating the privacy and dignity of migrants, asylum seekers, and border residents, potentially leading to discrimination and abuse.

The convergence of technology, law, and immigration policy, as demonstrated in the cases above, highlights the imperative for careful scrutiny and ethical considerations in the deployment of algorithmic systems in migration. The U.S. immigration system stands at a critical juncture, where the responsible use of AI demands careful evaluation to strike a delicate balance between security concerns and the protection of individual rights. As the nation grapples with the evolving landscape of migration management, these ethical challenges emphasize the pressing need for transparent and accountable practices to ensure that the benefits of AI are realized without compromising human rights.

### **Conclusion**

The exploration of the "algorithmification of migration" revealed the intricate relationship between technological advancements and global migration policies. As algorithms became integral to social systems, their integration into migration and asylum management is transforming the migration landscape. This study focused on UNHCR and the U.S. government, shedding light on the impacts and challenges of employing algorithms in migration. The adoption of AI and digital technologies in migration processes presented both promises and concerns, requiring a delicate balance between technological progress and safeguarding individual rights. Examining UNHCR's strategic use of AI demonstrated potential for positive change, while the U.S. immigration system raised ethical concerns. Beyond immediate challenges, the algorithmification of migration introduces a geopolitical dimension, emphasizing potential technological disparities between regions. This article also argued that the algorithmification of migration should not be seen purely in a negative light. Positive potential was exemplified by initiatives like the Immigration Policy Lab's GeoMatch tool, highlighting the capacity to enhance the well-being of immigrants and host countries. Ultimately, recognizing both capabilities and limitations of algorithmic systems is crucial in shaping the future of global migration policies and the lives of those seeking refuge and opportunity.

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