Artificial Intelligence (AI) in the asylum system

This paper reviews the existing and emerging applications of Artificial Intelligence (AI) in the context of asylum. The UK has a significant backlog in processing asylum claims. In June 2023, 215,500 asylum cases were 'in progress' with the UK Home Office with over half of these representing people awaiting an initial decision.[1] Therefore, the identification of fair and effective strategies to speed up the process – including the mobilisation of AI based technologies – is critical.

The evolving field of AI technologies encompassing machine learning, deep learning and artificial neural networks – could be a positively disruptive branch of data science. Its utilisation allows for improvements in the speed, efficiency and reliability of decision-making. Artificial Intelligence can identify patterns across large data sets and manipulate its own algorithms to increase its accuracy. This could assist with various stages of asylum processing, including information gathering, data sharing, planning, analysis and decision-making.[2,3] The AI streamlining of asylum casework through real-time language translation, potentially enables efficient communication between applicants and officials regardless of language barriers thus saving costs on translation services. Artificial Intelligence can assist in translating and organising vast quantities of documents, such as personal testimonies or legal paperwork, ensuring accuracy and consistency across multiple languages. Advanced AI translation tools are also capable of learning from context, which may facilitate greater understandings of the nuances and cultural specifics of an applicant's narrative.

In May 2023, the UK Home Office organised a 'hackathon' to explore possible ways AI-based technologies can help reduce the asylum backlog.[4] Later in the same year, the AI Safety Summit 2023[5] highlighted safety concerns posed by the speed of global advances in AI. A clear issue is whether protection of fundamental rights can be ensured. Legal frameworks such as the European Commission's proposed AI Act aim to regulate AI use while also providing a global safety standard.[6] Deploying AI in asylum processes raises critical concerns about the potential harm to already vulnerable groups.[7] Artificial Intelligence systems could lead to unfairly prejudiced decisions by perpetuating or amplifying biases. This danger is compounded by the 'black-box' nature of machine processes.[8] Ensuring that AI algorithms are transparent and accountable is essential to maintain the integrity of the asylum process, and to protect asylum seekers' rights.

Existing uses of AI in asylum

The collaborative *Algorithmic Fairness for Asylum Seekers and Refugees* (AFAR) project has started a comprehensive mapping of new technologies being used in migration and asylum fields in Europe. The resulting report identifies various uses of new technologies currently being implemented or piloted in the asylum field.[9] One of the technologies cited in the report is the pilot use of speech-to-text technology for transcription purposes in Italy.[9] While this is currently only used as a complement to human transcribers and not as a stand-alone tool, such tools can carry significant risks. Even subtle semantic variations in language can have a significant impact on credibility assessments.[10]

Another example is 'Casematcher' system used by the immigration authority in the Netherlands.[9] By using text analysis and scoring to identify commonalities in the accounts of asylum seekers who made similar claims, the system can find similar cases and make the decision-making process more consistent. Although the primary aim of the Casematcher system is to find similar cases and reduce case processing time, Ozkul[9] further argues that the tool can help caseworkers identify common narratives of asylum seekers by looking at past decisions. This information can provide decision-makers with a deeper understanding of prevalent risks in the applicant's country of origin. However, relying solely on the Casematcher system may lead decision-makers to question an applicant's credibility. If the narrative is too similar to past claims, it may be deemed fabricated. Conversely, if the narrative is too dissimilar, it may be deemed unlikely.

Asylum authorities also use new technologies for registering asylum seekers and gathering evidence for decision-making. For example, the asylum authority in Germany uses a name transliteration tool to standardise the spelling of names originally written in non-Latin

alphabets. This could assist authorities in achieving uniformity when representing such names across different databases and contribute to country-of-origin determination.[9] However, this tool is based on the questionable presumption that names reflect the borders established by nation-states.[9] Similarly, the asylum authority in Germany uses an automated dialect recognition tool to help with country-of-origin determination. This tool adopts a quantitative approach to language analysis and relies on comprehensive training data, but it cannot account for an individual's regional socialisation, either within their country of origin or during their journey.[9]

Natural language processing (NLP) has received considerable exploration. *Honeycomb* was developed by Trilateral Research to harness NLP to gain insights into the vulnerabilities and needs of survivors of human trafficking and modern slavery.[11] Natural language processing algorithms analyse large amounts of textual data systematically and identify recurrent themes, patterns and sentiments within survivor narratives. Natural language processing algorithms have also been used to understand asylum seekers' needs, verify the authenticity of documents and predict migration trends. The goal of Trilateral's Honeycomb application is to gain a deeper understanding of the experiences and perspectives of survivors without subjecting them to 'interview fatigue'. If the data is taken from interviews conducted well and according to empirical guidance, NLP can be used to identify blind spots where there is missing data. Harnessing NLP can also expedite research, as it can efficiently process vast amounts of text. These insights can be used to inform campaigns and interventions that support survivors and develop evidence-based policy. Furthermore, NLP can work alongside human decision-makers, reducing the emotional toll on immigration officials of reading accounts of extreme trauma and traumatic material.[12]

The *Explainable AI and Fairness in Asylum Law* (XAIfair) project aims to develop an explainable predictive algorithm AI system for asylum adjudication.[13] The project has access to a database of over 15,000 appeal decisions from the Danish Immigration Service. However, asylum credibility assessment is nuanced and occurs within the context of an open system, making it difficult to establish 'ground truth'. Karen Richmond has demonstrated the potential of legal case-based reasoning (L-CBR) methodology, a memory-based problem-solving paradigm conversant with AI and grounded in legal reasoning, to address this. Case-based reasoning systems solve new problems by retrieving stored 'cases' that describe similar cases and can adapt those episodic features and solutions to fit new requirements.[13] In this case, the model used the Mahalanobis Algorithm[a] in a simple piece of code that distils the most salient features in credibility decisions. In a small 'training set', this identified the strength of

correlations between a qualitatively derived set of salient features (e.g., the applicant's marital status, whether they came from a conflict zone, gender and whether violence was involved) and the ultimate credibility decision. This was then used to predict decisions in a number of further cases using this iterative CBR[b] approach. It is thought that data which indicates strong correlations between different features, when extended across the entire dataset and aggregated, will make it possible to derive the optimum set of salient features for predicting asylum adjudications. For example, the CBR model demonstrated a strong correlation between two particular features – perpetration of violence in the applicant's case and the applicant being a single male – resulting in a negative decision. Assuming that the asylum procedure is rational, such data can be used as 'ground truth' for use in understanding decision-making processes and for predictive AI modelling. Specifically, the most strongly correlated features go on to form the basis of an asylum credibility assessment. Artificial Intelligence is essentially a repository of machine-processable representations of existing knowledge within the chosen domain. It may therefore help to contextualise the relations between features and thereby direct and generalise algorithmic knowledge and processing for future cases.

Artificial Intelligence models are, however, created by replicating human decision-making processes. Algorithms are essentially 'opinions embedded in code'.[14] Predictive automated systems may, therefore, reproduce biased and erroneous decisions based on prior misinformation or discrimination.[15] For example, asylum credibility determination often relies on 'internal consistency' as a criterion without evidence to support this assumption.[16–18] If the decisions fed into the algorithm contain biases based on nationality and/or race, the algorithm will replicate such biases in future automated determinations.[19]

Conclusion

The use of AI in processing asylum claims may address some of the challenges faced by decision-makers and ease their workload. However, the application of AI requires careful implementation, keeping human rights and ethical considerations at the forefront particularly given the UK's politicised climate.[20] Additionally, privacy is paramount, as the sharing of asylum seekers' data can jeopardise the very safety and protection they are seeking.[21] To mitigate such harms, individuals and institutions must remain accountable and AI-based tools need to be explainable and grounded in an explicit normative framework. Organisations must be transparent about their use of AI and ensure that applicants are informed if algorithmic decision-making processes are applied to their data and

made aware of potential implications and ensure safeguards are in place.

There is currently limited publicly available data on the use of AI and its real-life implications for asylum seekers. Rigorous analysis is necessary before it can be used confidently. To prevent potential biases and threats to fundamental rights, transparency and accountability should remain core principles. The current uses of AI by immigration and asylum authorities are rarely designed to benefit migrants and asylum seekers. Without robust data on outcomes, our view is that the risk of using such technologies outweighs the anticipated benefits.

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Notes

a. In pattern recognition and classification tasks, the Mahalanobis distance is used to measure how similar or dissimilar a test point is to a set of training points with known class labels. Therefore, enables developers to identify how well AI has learned based on previous data.

b. Case-based reasoning is a paradigm of AI where information is input and stored and not only retrieved to solve new problems but also can adapt solutions from past information to address new needs.

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