

# Ethical and Privacy Considerations in Using AI with People with Disabilities

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## Abstract

The integration of artificial intelligence (AI) technologies into the lives of individuals with disabilities has engendered new opportunities to enhance independence, communication, education, and access to services. Nonetheless, these advancements also raise significant ethical and privacy concerns that require careful attention to ensure AI benefits are shared equitably. This review examines the principal ethical issues associated with the deployment of AI for individuals with disabilities, including fairness, informed consent, bias and discrimination, data privacy, algorithmic transparency, and accountability. Utilising current research, policy frameworks, and real-world examples, the discourse underscores the importance of inclusive AI design and prudent governance. It concludes with strategic recommendations to foster equitable, secure, and person-centred AI systems that uphold human rights and promote disability justice.

**Keywords-** Artificial intelligence, Technology, Disabilities, Ethical, Communication.

## 1. Introduction

Artificial Intelligence (AI) is rapidly transforming modern life, offering solutions across sectors such as healthcare, education, communication, and social services. People with disabilities benefit as AI improves their quality of life, independence, and social involvement (Shinohara & Wobbrock, 2011). AI-assistive technologies—such as predictive text, speech recognition, prosthetics, autonomous navigation, and adaptive learning—are making progress in addressing physical, sensory, cognitive, and communication challenges (Almalki et al., 2020; Wang & Kennedy, 2020). These developments demonstrate AI's potential to promote inclusive environments and fairness. The role of artificial intelligence in supporting people with disabilities aligns with international human rights, particularly the UN Convention on the Rights of Persons with Disabilities (UNCRPD). The convention promotes fair access to information and communication technology, emphasising how assistive technology supports independence and social participation (UN, 2006). AI goes beyond just technology; it acts as an advocate for rights-based development. However, the use of AI in disability contexts raises significant ethical and privacy concerns that require careful management to prevent harm and ensure fairness (Jobin, Ienca, & Vayena, 2019).

Artificial Intelligence (AI) can empower users but also risks increasing inequalities and social exclusion, especially for marginalised groups like people with disabilities. Historical issues such as institutionalisation, eugenics, surveillance, and loss of autonomy highlight the need for ethically responsible AI. Without safeguards, AI may reproduce biases, reinforce prejudices, or violate privacy and dignity (Moser, 2006; Rettberg, 2021).

A significant ethical concern is AI's opacity. Many AI systems operate as "black boxes," which makes it difficult to understand how they make decisions (Pasquale, 2015). This lack of transparency can be concerning, especially when these decisions impact people with disabilities in areas such as healthcare, education, or services. When transparency is lacking, mistakes may go unnoticed, making it hard for users to challenge or appeal decisions (Binns, 2018). Additionally, bias in training data can result in unfair outcomes that fail to consider the diverse needs of disabled individuals (Buolamwini & Gebru, 2018).

Bias in AI systems extends beyond basic ideas. Evidence indicates that facial recognition systems often struggle to recognise people with distinctive features or expressions, especially among people with disabilities (Kim, 2020). Similarly, speech recognition systems face challenges with unusual speech patterns found in individuals with cerebral palsy or autism, which can lead to frustration and social isolation (Caron et al., 2019). These issues stem from excluding disabled individuals from training data and a lack of inclusive design, rather than user mistakes. AI development often overlooks contributions from individuals with disabilities. Although collaborative design is of interest, people with disabilities remain underrepresented in AI teams, policy groups, and ethics committees (Wang & Kennedy, 2020). This exclusion breaches principles of inclusion, resulting in systems that do not accurately reflect users' experiences. Actual inclusive design involves disabled people as equal stakeholders and co-creators, not just as concerns for accessibility.

Legal and policy frameworks seek to address these challenges. The EU's GDPR classifies health and disability data as "special category data," requiring stronger protections (Voigt & Von dem Bussche, 2017). India's Digital Personal Data Protection Act (2023) focuses on data minimisation, purpose limitation, and informed consent. However, most laws and guidelines lack specific emphasis on AI and disability or detailed enforcement mechanisms. Global organisations, such as UNESCO, OECD, and IEEE, have issued guidelines on AI ethics that emphasise transparency, fairness, human-centred design, and accountability (UNESCO, 2021). However, a gap remains between these principles and their practical application, especially for marginalised groups like people with disabilities. Without accountability and inclusive policies, ethical AI remains an aspirational goal rather than a tangible reality.

This review provides a comprehensive examination of the ethical and privacy concerns associated with the use of artificial intelligence among individuals with disabilities. It encompasses research studies, legal frameworks, case examples, and participatory design principles to evaluate how AI can either support or threaten the rights and well-being of individuals with disabilities.

Additionally, it advocates for strategies to develop AI systems that are more inclusive, transparent, and ethical, thereby safeguarding autonomy, dignity, and justice. Artificial Intelligence offers significant opportunities to support individuals with disabilities; however, these benefits depend on ethical design, inclusive governance, and robust privacy protections. Its implementation should follow principles of social responsibility, fairness, and human rights, ensuring that the perspectives and rights of individuals with disabilities are prioritised in innovation and regulation.

### **Scope of Artificial Intelligence Application in Disability Environments**

The use of artificial intelligence to help people with disabilities encompasses a wide variety of assistive technologies and functional systems.

- Advanced AAC systems integrating AI technologies enable individuals with speech impairments to express their thoughts and needs more accurately and independently.
- AI-enhanced mobility devices assist people with visual impairments by integrating GPS navigation and real-time object recognition, thereby promoting safer and more autonomous movement.
- AI-driven educational platforms tailor instructional content to address the learning styles and challenges faced by students with disabilities, thereby encouraging more inclusive participation in academia.
- AI-powered virtual assistants and chatbot interfaces offer therapeutic and cognitive support to people with neurodiverse conditions, improving their emotional well-being and daily functioning.

Although these systems show promising potential, poor design and deployment may inadvertently marginalise or exploit users if ethical principles are not prioritised (Perera et al., 2020).

## **2. Ethical Concerns**

### **2.1 Informed Consent and Autonomy**

Obtaining informed consent is a crucial part of ethical healthcare and technology practices. However, people with disabilities often struggle to understand how AI systems manage their data. Consent forms are usually unclear, and reobtaining consent is rarely practised (Caine & Hanania, 2013). To preserve autonomy, AI developers should use accessible formats, communicate clearly, and offer decision aids to support informed consent. Consent should be regarded as a continuous, interactive process rather than a one-time event.

### **2.2 Bias and Discrimination**

Artificial Intelligence systems often rely on datasets that contain societal biases. When these datasets do not include adequate representation of individuals with disabilities, algorithms may misinterpret their behaviours, speech, or needs. For example, facial recognition technology often exhibits lower accuracy for individuals with atypical facial features, raising concerns about potential discrimination (Buolamwini & Gebu, 2018).

Algorithmic bias can manifest in various forms.

- Misclassification of disability status
- Refusal to provide services or accommodations.
- False positives in behaviour detection
- Biased recruitment tools used in hiring processes.

Integrating a wide range of disability data and involving disabled users in model development are essential strategies to reduce bias (Rettberg, 2021).

### 2.3 Surveillance and Loss of Privacy

The integration of AI technologies, such as facial emotion detection, surveillance, and wearable devices, has sparked debates over privacy violations and surveillance risks. While used in care to enhance safety, they threaten privacy, autonomy, and dignity (Zuboff, 2019). The power imbalance between users and data collectors may also undermine consent. Privacy concerns intensify when privacy is severely compromised in cases where artificial intelligence gathers detailed health and behavioural data, shares this information without user consent, or routinely monitors. The principle of “privacy by design” should be integrated into all artificial intelligence systems created for users with disabilities from the beginning (Cavoukian, 2011).

### 2.4 Lack of Algorithmic Transparency

The inner workings of artificial intelligence, especially within neural networks and deep learning systems, are often unclear, making it hard to understand how decisions are made. This issue—known as the “black box” problem—reduces user trust and hinders efforts to establish accountability in critical areas, such as healthcare, employment, and access to education for people with disabilities (Pasquale, 2015).

## 3. Legal and Policy Frameworks

### 3.1 International Human Rights Instruments

The UNCRPD adopts a human rights-based approach to the use of technology. Articles 22 (Respect for Privacy) and 21 (Freedom of Expression and Access to Information) explicitly affirm that individuals with disabilities have rights to privacy, accessible information, and protection against arbitrary interference (UN, 2006).

### 3.2 Data Protection Laws

Numerous data protection laws safeguard the privacy of sensitive personal information.

- The GDPR labels disability-related data as “special category data,” needing explicit consent and extra safeguards (Voigt & Von dem Bussche, 2017).
- The Indian Digital Personal Data Protection Act (2023) classifies health data as sensitive and mandates measures like restricting data use, minimising collection, and safeguarding user rights.

### 3.3 AI Ethics Guidelines

Organisations such as UNESCO, OECD, and IEEE have established principles for AI that emphasise a human-centred, inclusive, and transparent approach. However, their adoption and implementation in disability-specific contexts remain limited.

Main gaps include:

- Excluding disabled stakeholders from policy consultations.
- Insufficient enforcement measures for fairness and accessibility.
- Dependence on technical solutions lacking social protections

## 4. Case Studies and Illustrative Examples

### 4.1 Predictive Policing and Behavioural Surveillance

Some educational institutions and residential facilities for children with disabilities use AI-based behaviour monitoring tools to anticipate possible aggression or elopement. While these systems aim to prevent harm, they can sometimes misclassify normal behaviours as problematic and result in unnecessary restrictions (Rosenberg et al., 2020).

### 4.2 Recruitment Algorithms and Disability

Automated hiring systems may unintentionally disadvantage candidates with speech or mobility delays that differ from typical norms. For instance, an AI-driven resume screening tool might unfairly assess employment gaps caused by medical leave, thereby reinforcing existing structural inequalities (Binns, 2018).

### 4.3 Smart Homes and Monitoring Systems

Smart home assistants that respond to voice commands or motion sensors can help people with physical disabilities. However, they may be inaccessible to individuals with speech impairments and could share data with third-party advertisers, raising privacy concerns (Lomas, 2019).

## 5. Designing Inclusive AI: A Path Forward

### 5.1 Participatory Design and Co-Creation

The development of ethical artificial intelligence aimed at individuals with disabilities requires participatory methods that actively involve persons with disabilities at every stage, from conceptualisation to implementation. Co-design ensures that systems accurately reflect users' lived experiences, preferences, and rights (Wang & Kennedy, 2020).

### 5.2 accessibility as a core principle

AI tools should be accessible to people with diverse disabilities by taking into account the following factors.

1. Multiple input and output modalities
2. Compatibility with assistive technologies
3. Simple and user-friendly interfaces

### 5.3 Data Governance and Ownership

People with disabilities should have control over their data. This includes rights to:

4. Access and correct data
5. Know how data is used and by whom
6. Delete data and opt out of surveillance

Models of community-based data stewardship and disability data cooperatives are progressively acknowledged as promising and fair alternatives (Taylor & Kukutai, 2016).

### 6. Recommendations

7. Use precise language, visual aids, and interactive features to implement accessible methods of obtaining consent, ensuring informed agreement.
8. Perform regular algorithm audits to assess AI systems for bias and release transparency reports.
9. Ensure participatory design by actively involving individuals with disabilities as co-researchers, testers, and designers.
10. Establish and enforce AI regulations within disability services, focusing on privacy and ethics standards across educational, healthcare, and social sectors.
11. Invest in inclusive data practices. Create ethically sourced, representative datasets together with disability communities.

### 7. Conclusion

As AI becomes more integrated into daily systems, its connection with disability presents both opportunities and ethical challenges. AI can enhance independence, access, and participation through assistive technology, personalised education, health monitoring, and mobility devices, promoting inclusion and empowerment (Almalki et al., 2020; Shinohara & Wobbrock, 2011). However, these benefits also raise ethical, legal, and privacy concerns, especially when inclusive design, accessible governance, and human-centred approaches are lacking.

This review highlights the importance of adopting careful, ethical methods when integrating AI to support individuals with disabilities, recognising their diverse experiences and needs (Wang & Kennedy, 2020). AI models often rely on datasets that underrepresent or inaccurately depict disabilities as defects, which can reinforce stigma and exclusion (Buolamwini & Gebru, 2018; Rettberg, 2021). This review emphasises the importance of inclusive, participatory AI design, involving individuals with disabilities as co-creators, testers, researchers, and decision-makers throughout the AI lifecycle. This approach addresses ethical concerns and offers practical benefits, fostering innovative, resilient, and effective technologies that meet real-world needs (Caron et al., 2019). Engaging disabled stakeholders also ensures AI systems uphold dignity, agency, and self-determination, preventing top-down, technocentric solutions (Moser, 2006).

The concept of informed consent in AI needs reevaluation, especially for users with cognitive, communicative, or sensory disabilities. Existing procedures are often difficult to access, complex, or one-sided, limiting dialogue. To preserve the importance of consent and respect users' cognitive differences, implementing dynamic, ongoing, and supported consent models with accessible interfaces and customised communication is essential (Mittelstadt et al., 2016). Alongside technical and legal measures, it is essential to redefine the core values of AI. Disability justice, an intersectional framework supporting collective liberation and anti-ableism, offers an important perspective for rethinking AI development (Piepzna-Samarasinha, 2018). AI should not aim to “fix,”

In conclusion, ethical and privacy concerns related to AI and people with disabilities are complex and urgent because they are closely connected to issues of justice, fairness, and human rights. AI can either support or threaten their rights and dignity, depending on how it is designed, implemented, and regulated. The issue goes beyond including people with disabilities in AI development; it demands a fundamental shift in the values, frameworks, and processes that guide technological progress.

Building an inclusive, ethical AI future requires a collective effort to amplify the voices of individuals with disabilities, honor diverse perspectives, and embed care, accountability, and accessibility into technology. This ensures AI serves as a tool for liberation and empowerment rather than oppression.

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