**A Hermeneutical Analysis of Human Rights Protections in the Deployment and Regulation of AI Systems in the Western Balkans**

**Abstract**

This study uses a hermeneutical approach to analyze human rights protections in AI regulation across the Western Balkans. The six countries: Serbia, Bosnia and Herzegovina, North Macedonia, Albania, Montenegro, and Kosovo face challenges in balancing technology and fundamental rights. Through an interpretative analysis of legal texts and policies, the research investigates the understanding and implementation of human rights principles in AI governance. Findings show significant disparities in regulatory approaches, with many countries lacking comprehensive AI legislation despite increased technology use. The hermeneutical lens reveals how historical legacies and EU accession influence interpretations of privacy, non-discrimination, and transparency. The study identifies gaps between international human rights standards and regional practices, suggesting opportunities for rights-centered AI governance. It concludes with policy recommendations for regional cooperation, capacity building, and contextually appropriate regulations to protect human rights and encourage innovation.

***Keywords***: artificial intelligence, human rights, Western Balkans, hermeneutics, legal interpretation, regulatory frameworks.

# Introduction

The rapid advancement of artificial intelligence (AI) globally has significant implications for human rights and governance, particularly in the Western Balkans, where it intersects with complex political and societal changes. As these countries strive for European Union integration, regulating AI presents unique challenges and opportunities for human rights protection. The Western Balkans' post-socialist transition and varying institutional capacities necessitate a nuanced understanding of human rights in the context of AI. AI is increasingly integrated into public administration, security, healthcare, and financial services, such as facial recognition in Serbia’s “safe city” initiatives and algorithmic decision-making in Kosovo’s social welfare (Borici, 2025; ITS, 2024; Krivokapić et al., 2023). Deployments of AI raise critical human rights issues, including privacy and surveillance, necessitating regulatory attention. The Western Balkans’ regulatory framework remains fragmented, with countries like Serbia beginning to develop national AI strategies, while others lack dedicated policies (Schoenherr, 2024; ITS, 2024). This inconsistency poses challenges for human rights protection. A hermeneutical approach can analyze how human rights are conceptualized in AI governance, considering cultural and historical contexts. This research explores key questions about human rights interpretations in AI frameworks, cultural influences, and gaps between international standards and regional practices, aiming to enhance understanding of AI governance and improve human rights protections in the region. This research explores policy and regulatory approaches in the Western Balkans by aligning AI governance with EU standards and human rights principles during their integration. It aims to guide the development of frameworks that protect human rights while fostering technological innovation. The paper includes a literature review of human rights principles, global AI regulations, hermeneutical theory, and regional contexts; a methodology section detailing the hermeneutical approach; an analysis of legal frameworks, cultural interpretations, and AI deployment challenges; and concludes with key findings and policy recommendations for human rights protections in AI governance.

# Literature Review

## 2.1 Human Rights Principles Relevant to AI Systems

The deployment of AI technologies raises major human rights concerns (Agalliu & Hoxha, 2024). Privacy and data protection are primary issues, as AI requires extensive personal data. Human Rights Watch (2023) highlights risks to privacy from surveillance and automated decision-making, stressing the need for safeguards. The right to privacy is protected by instruments like the European Convention on Human Rights and the EU Charter, relevant for Western Balkan countries in EU accession stages. Non-discrimination and equality are also critical, with evidence of algorithmic bias in AI applications. As Bajrami and Halili (2024) note, while Western Balkan economies have ratified key human rights conventions, few have provisions against algorithmic discrimination, raising concerns given the region's ethnic and political divisions. Freedom of expression and information is another major consideration in AI governance. Content moderation algorithms and filtering mechanisms impact information flow and expression. Additionally, the SHARE Foundation (2024) argues that digital rights in the Western Balkans face challenges from regulatory gaps and automated content systems, raising concerns about censorship and free expression. Transparency and accountability are essential human rights dimensions for AI systems. The *“black box”* nature of AI complicates decision-making transparency and accountability for harmful outcomes. For example, the Institute for Technology and Society (2024) highlights Kosovo’s lack of AI governance bodies, leading to accountability deficits, transparency and explainability in respecting the boundaries between AI usage and human rights respects.

## 2.2 Global AI Regulation Frameworks and Their Human Rights Dimensions

The EU’s AI regulatory framework significantly impacts the Western Balkans’ EU integration aspirations (see EU Act, 2023). The EU AI Act establishes a risk-based framework to mitigate AI's potential harms, aiming to protect human rights while fostering innovation (see EU Act, 2023). Complementary regulations, like the DSA and DMA, address broader digital governance concerns (see the Open Society Foundation for the Western Balkans, 2024). However, a recent analysis highlights that while EU citizens are protected by these regulations, Western Balkan citizens lack equivalent protections, creating challenges for consistent human rights safeguards across Europe (see European Western Balkans, 2025). The Council of Europe has established frameworks, including Convention 108+ and its protocols for AI guidelines, focusing on human oversight, transparency, and non-discrimination (see Convention 108+ and its protocols, 2018). In her thesis, Sollaku (2023) highlights that these principles are not fully adopted in the Western Balkans and the region faces many challenges in the AI advancement. The Council’s human rights offers standards for regional assessments, complemented by UN frameworks which outline corporate responsibilities and privacy concerns in technology deployment (see the UN Recommendation on the Ethics of Artificial Intelligence, 2021). These global benchmarks are essential for evaluating regional AI governance and human rights protections.

## Hermeneutical Theory in Legal Analysis

Hermeneutics, the theory of interpretation, offers insights into how legal texts and human rights principles are contextualized (Stelmach, 2023). Developed initially in theology and literature, it now informs legal analysis, particularly in AI regulation, by examining meaning construction in specific sociocultural contexts. Key hermeneutical concepts, such as the *“hermeneutic circle”*, highlight the interplay between parts and whole and the influence of pre-understanding on interpretation (Stelmach, 2023). As AI challenges traditional legal frameworks, hermeneutics aids in adapting these frameworks to new contexts. Regional courts, like the European Court of Human Rights, are crucial in shaping hermeneutical interpretations of human rights relevant to AI governance in the Western Balkans (Erdogan, 2021).

**Regional Legal Frameworks in the Western Balkans**

The Western Balkans are harmonizing their legal systems with EU standards, progressing variably. The EU accession process promotes AI governance reforms, particularly in data protection. Krivokapić et al. (2023) emphasize the need for strengthening institutional capacities, presenting both opportunities and challenges for AI governance frameworks. Regional bodies like the Regional Cooperation Council aid coordination, but progress remains mostly national. Legal traditions affect rights protection and regulation; Serbia is advancing AI regulation with a new 2024-2030 strategy (Schoenherr, 2024), while Kosovo lacks a comprehensive framework (ITS, 2024). Variations result from differing institutional capacities and political priorities. All countries in the region have adopted data protection laws aligned with the EU's GDPR, but implementation is inconsistent, and privacy safeguards related to AI are underdeveloped (see European Parliament, 2020). Gaps remain in understanding human rights principles in AI governance. Existing research often neglects hermeneutical aspects of legal texts and human rights. This study aims to address this gap by analyzing human rights protections in AI regulation through a hermeneutical lens across the Western Balkans.

# Methodology

This study uses a hermeneutical approach to analyze AI systems’ human rights protections in the Western Balkans. It outlines the methodology, data sources, analytical framework, and study limitations.

*Hermeneutical Analysis Approach*

The analysis emphasizes three interpretative levels. First, textual” “transparency,” and “accountability” in AI governance documents. Second, contextual analysis situates these texts within their historical, cultural, and political frameworks, acknowledging the influence of factors like socialist legacies and EU integration on human rights interpretations. Third, comparative analysis explores differences among the six Western Balkans countries, Serbia, Bosnia and Herzegovina, North Macedonia, Albania, Montenegro, and Kosovo, identifying regional patterns and varying conformity with international human rights standards, focusing on both legal frameworks and practical implementations. The study refers to Gadamer’s philosophical hermeneutics, emphasizing pre-understanding and historical consciousness in interpretation (Regan, 2012). It explores how Western Balkans countries interpret and implement human rights principles in AI governance, highlighting regional understanding and practical implications.

## Data Sources

## This research employs diverse data sources for a hermeneutical analysis, focusing on secondary sources like academic journals and legal documents regarding AI governance and human rights in the Western Balkans. Key materials include national legislation on AI governance, national AI strategies, regulatory guidelines, constitutional provisions, and regional agreements. Academic literature provides theoretical and comparative perspectives, while regional reports offer insights into the practical implementation of regulatory frameworks through civil society assessments, international organization reports, EU progress reports, technology sector analyses, and case studies on AI deployment and its human rights implications.

## Analytical Framework

The research’s analytical framework centers on key human rights principles governing artificial intelligence, analyzing regional AI regulation strategies:

1. *Privacy and data protection*: How are privacy rights defined and protected in AI? What mechanisms safeguard personal data in AI systems?

2. *Non-discrimination and equality:* How are algorithmic bias and discrimination addressed? What protections exist for marginalized groups?

3. *Transparency and accountability*: What criteria govern AI transparency? How are accountability mechanisms structured?

4. *Freedom of expression and information*: How do AI regulations balance innovation with free expression and information access?

5. *Human dignity and autonomy*: How is human agency and dignity preserved in automated decision-making?

Each principle is examined through three dimensions:

1. *Formal acknowledgment*: Are these principles explicitly recognized in legal and policy frameworks?

2. *Interpretative approach*: How are these principles interpreted in AI governance?

3. *Implementation mechanisms*: What strategies ensure adherence to these principles in AI deployment?

This framework enables a systematic analysis of the recognition, interpretation, and operationalization of human rights principles in regulatory contexts.

# Results and Discussion

## 4.1 Comparative Analysis of AI-Related Legislation in the Western Balkans

The Western Balkans’ AI regulatory framework is fragmented and varies in effectiveness. Serbia leads with its 2019 Strategy for AI Development (see the Strategy for the Development of Artificial Intelligence in the Republic of Serbia, 2019), recognizing human rights through existing laws. North Macedonia initiated AI governance under its National ICT Strategy (see North Macedonia National ICT Strategy, 2021) but lacks a dedicated framework and takes a reactive approach to human rights. Montenegro, an EU candidate, aligns digital governance with EU standards in its Digital Transformation Strategy, yet lacks specific human rights protections. Albania’s AI governance is nascent, with limited legal recognition and minimal guidance on human rights protections in its Digital Agenda. As Sollaku (2023) highlights in her thesis, *“significant gaps in addressing fundamental rights implications of algorithmic systems”*. Bosnia and Herzegovina faces challenges due to its fragmented governance, lacking state-level digital coordination, which leads to inconsistent entity-level approaches (Krivokapić et al., 2023). Kosovo, the youngest state, lacks dedicated AI laws or governance, creating a regulatory vacuum, though it has modern data protection aligned with GDPR (see the ITS study, 2024).

## Data Protection Laws

Data protection frameworks are the most developed AI governance regulations in the Western Balkans, with all six countries adopting laws aligned with the EU's GDPR, though implementation varies (Ruzic, 2021). They safeguard privacy rights in AI, such as purpose limitation and data minimization. For example, Serbia's 2018 law on GDPR closely mirrors and protects against significant automated decision-making effects, but its effective implementation is limited (Spalević & Vićentijević, 2022). Kosovo’s law also includes GDPR principles, but challenges undermine effectiveness (Zejnullahu, 2022). Literature also reveals that although legally established, these frameworks are insufficient for broader human rights issues related to AI, lacking provisions for machine learning challenges like inferred data and algorithmic transparency (Ruzic, 2021).

## Digital Governance Frameworks

Digital governance frameworks in the Western Balkans offer varied human rights protections in technology, including digital strategies, electronic communications regulations, and cybersecurity provisions relevant to AI. For example, Serbia’s laws on Electronic Communications and Information Security provide mechanisms for technology governance focused on security and reliability (see Law on Electronic Communications, 2014). However, as noted by the SHARE Foundation (2024), these lack provisions for AI’s unique challenges such as transparency and accountability (see SHARE Foundation, 2024). The European Western Balkans (2025) emphasizes a regulatory gap: *while EU citizens benefit from the Digital Services Act (DSA) and similar regulations, citizens in the Western Balkans do not, complicating consistent human rights protections regionally*. Furthermore, the report of the Open Society Foundations for the Western Balkans (2024) state that the EU AI Act aims to manage risks to fundamental rights, a risk-based approach not yet integrated into Western Balkans regulations, potentially leaving human rights protections vulnerable as AI is deployed.

## Sectoral Regulations

Sectoral regulations in areas such as healthcare, finance, and public administration provide additional layers of governance to AI deployment across the Western Balkans. These domain-specific frameworks often include provisions on confidentiality, consent, and service standards that have implications for how AI systems can be deployed in these contexts. In the healthcare sector, regulations on medical data confidentiality and patient rights establish important parameters for AI applications in diagnostics, treatment planning, and health administration. For example, Serbia’s Law on Health Care (see Law on Health Care, 2019) includes provisions on patient privacy and medical confidentiality that apply to technological applications, though without specific reference to AI systems. Similar frameworks exist across the region, though with limited explicit recognition of AI-specific challenges in healthcare contexts. Financial sector regulations across the Western Balkans include provisions on algorithmic trading, credit scoring, and fraud detection that have relevance for AI applications in these domains. Montenegro’s financial services regulations, for example, include requirements for transparency and explainability in credit decisions that provide some protections against discriminatory or opaque algorithmic assessments (Ruzic, 2021). However, these protections remain limited and inconsistent across the region. Public administration represents a particularly important sector for AI governance, as governments across the Western Balkans increasingly deploy algorithmic systems for service delivery, resource allocation, and decision-making (Borici et al.,2025). Serbia's Law on Electronic Government (cited in Golic, 2023) establishes principles for digitalization of public services, including requirements for accessibility and non-discrimination. However, these frameworks lack specific safeguards for algorithmic decision-making in public administration, creating risks for transparency, accountability, and equal treatment (Krivokapić et al., 2023).

## 4.2 Gaps and Challenges in Human Rights Protections

The comparative analysis of legal and policy frameworks reveals several significant gaps and challenges in human rights protections related to AI across the Western Balkans. First, there is a notable absence of AI-specific legislation that addresses the unique challenges posed by these technologies. While general legal frameworks provide some protections, they often fail to address novel issues such as algorithmic transparency, explainability, and accountability. Second, there are significant implementation gaps between formal legal protections and practical realities. Even where relevant legal frameworks exist, limited institutional capacity, resource constraints, and enforcement challenges undermine their effectiveness in practice. The ITS (2024) study on Kosovo highlights that “the gap between legal frameworks and implementation capacity creates significant risks for human rights as AI systems are deployed without adequate oversight or safeguards.” Third, there is limited regulatory attention to algorithmic discrimination and bias, despite the region's complex ethnic, religious, and political divisions. While all Western Balkan countries have adopted anti-discrimination legislation, these frameworks rarely address the specific challenges of algorithmic bias or provide mechanisms for identifying and addressing discriminatory outcomes in AI systems. Fourth, there are significant disparities in regulatory development across the region, creating risks for inconsistent human rights protections. While countries like Serbia have made progress in developing AI governance frameworks, others like Kosovo and Bosnia and Herzegovina lag significantly behind, creating a fragmented regional landscape for human rights protections in AI contexts. Fifth, there is limited regional coordination on AI governance, despite the cross-border nature of many AI applications and services. The absence of harmonized approaches creates challenges for consistent human rights protections across the region and complicates alignment with EU standards as part of the accession process. Table 1 provides a comparative overview of key legal provisions related to AI governance across the six Western Balkans countries, highlighting significant variations in regulatory development and human rights protections.

Table 1: Comparative Analysis of AI Regulation in Western Balkans Countries

| **Country** | **Dedicated AI Strategy** | **Data Protection Law with Automated Decision-Making Provisions** | **Algorithmic Impact Assessment Requirements** | **Explicit Human Rights Safeguards in AI Contexts** |
| --- | --- | --- | --- | --- |
| Serbia | Yes (2020-2025) | Yes | Limited | Partial |
| Bosnia and Herzegovina | No | Yes | No | No |
| North Macedonia | No (only in ICT Strategy) | Yes | No | No |
| Albania | No | Yes | No | No |
| Montenegro | No (only in Digital Transformation Strategy) | Yes | No | Partial |
| Kosovo | No | Yes | No | No |

***Note:*** *This table represents the regulatory landscape as of May 2025, based on the sources cited in this research paper.* ***Source:*** *Author elaboration on data.*

## 4.3 Cultural and Societal Interpretations of Human Rights

The interpretation and implementation of human rights principles in AI governance across the Western Balkans are shaped not only by formal legal frameworks but also by distinctive cultural and societal contexts. The Western Balkans region show distinctive cultural values and historical experiences that shape interpretations of key human rights principles relevant to AI governance. Privacy, for example, is understood through lenses influenced by communal traditions, historical experiences of surveillance, and more recent digital transformations (Rusic, 2021). These dynamics are evident across the region, creating distinctive interpretative contexts for privacy rights in AI governance. Serbia's relatively emphase on state security in its regulatory approach reflects historical experiences and political priorities that shape how privacy is balanced against other considerations (Spalević & Vićentijević, 2022). Montenegro’s coastal tourism economy has influenced its approach to data governance, with greater attention to international standards and cross-border data flows reflecting economic priorities (see EU report for Montenegro, 2025). Conceptions of human dignity across the Western Balkans are similarly influenced by distinctive cultural and historical factors. Religious traditions including Orthodox Christianity, Catholicism, and Islam have shaped understandings of human dignity in ways that influence approaches to technological governance (Sollaku, 2023). These traditions often emphasize human uniqueness and the spiritual dimension of personhood, creating potential tensions with increasingly automated decision-making systems. Equality and non-discrimination principles are interpreted through the complex lens of the region's ethnic, religious, and political divisions (see FRAME, 2017). The legacy of conflict in the 1990s has created heightened sensitivity to discrimination along ethnic and religious lines, though this has not consistently translated into robust protections against algorithmic discrimination. As Krivokapić et al. (2023) observe, *“while anti-discrimination frameworks exist across the Western Balkans, their application to algorithmic contexts remains underdeveloped, creating risks that AI systems could reinforce existing societal divisions*.*”*

**4.4 Post-Socialist Transition and Its Impact on Rights Discourse**

The shift from socialist systems to market economies and democratic governance has significantly influenced rights discourse in the Western Balkans, creating unique contexts for human rights in technological governance shaped by socialist legacies (Poulou, 2014). Socialist legal systems in Yugoslavia and Albania prioritized economic and social rights while limiting political liberties, a legacy that affects current rights conceptualization with implications for AI governance (Poulu, 2014). The SHARE Foundation (2024) notes that these transitions led to hybrid rights frameworks blending socialist protections with individual liberties and market freedoms. Post-socialist privatization, especially in telecommunications and media, introduced regulatory challenges and altered the balance between state and private entities in digital governance, impacting responsibility for human rights protections in AI (Dalakoglou, 2012). Democratic consolidation has underscored the importance of rule of law, transparency, and accountability in AI governance. However, as Krivokapić et al. (2023) highlight, Western Balkan economies often lack institutional capacity, raising vulnerabilities in human rights protections as AI systems are implemented.

## 4.5 Public Perception of Technology and Surveillance

Public perceptions of technology and surveillance in the Western Balkans reflect historical experiences and current realities (Budak et al., 2014; Budak et al., 2012). The legacy of state surveillance during socialism shaped attitudes toward monitoring and data collection, affecting perceptions of AI surveillance systems (Budak et al., 2012; Hallinan et al., 2012). The latest ITS (2024) study in Kosovo notes that public attitudes toward surveillance technologies reflect tensions between security concerns, privacy values, and trust in institutions. This regional dynamic shows divided opinions on balancing AI security applications with privacy protections. Trust in institutions is crucial for shaping public perceptions of AI governance. In the Western Balkans, low trust in government compared to EU averages hampers the establishment of legitimate AI governance frameworks. The SHARE Foundation (2024) furthermore, notes that *“limited public trust in regulatory institutions undermines the perceived legitimacy of technological governance frameworks.”* Media coverage and public discourse on AI across the region tend to emphasize either economic opportunities or security applications, with limited attention to human rights implications (SHARE Foundation, 2024). This framing shapes public understanding and expectations regarding appropriate governance frameworks. The relative absence of robust civil society engagement on AI governance issues in some countries further limits public discourse on human rights dimensions of these technologies (Skolnik & Haman, 2024).

## Hermeneutical Interpretation of Legal Texts and Policies

## Textual Analysis of Key Legal Provisions

A close reading of legal texts in the Western Balkans reveals significant variations in defining key AI governance concepts (Boriçi et al., 2025). Terms like *“automated decision-making,” “algorithm,” “artificial intelligence,” and “profiling*” are inconsistently defin *“profiling”* as any automated processing of personal data to evaluate personal aspects of individuals, closely mirroring GDPR language but lacking AI-specific limitations (see Law on Personal Data Protection of RS, 2019). Kosovo’s Law similarly addresses automated decision-making with different terminology and insufficient implementation guidance for AI (see Law on Protection of Personal Data of Kosovo, 2019). The lack of detailed guidance contributes to ambiguity in applying protections to AI in Kosovo. The legal texts in the region vary in technological specificity, predominantly using technology-neutral language that may inadequately address AI challenges, leading to potential interpretative gaps as technologies advance.

## Interpretative Approaches in Judicial and Administrative Practice

Judicial and administrative interpretation of legal texts offers insights into human rights principles in AI governance (Hogan & Lasek-Markey, 2024). While AI-specific jurisprudence in the Western Balkans is limited, general legal interpretations in technology provide valuable perspectives. Data protection authorities in the region are addressing AI issues through guidance and enforcement, though effectiveness varies (Boriçi et al., 2025). Serbia’s Commissioner for Information has issued key opinions on biometric surveillance that balance security and privacy rights (see Law on Personal Data Protection of RS, 2019). Kosovo’s Information and Privacy Agency faces capacity constraints that hinder detailed guidance on AI applications, as noted in the ITS (2024) study, which highlights limited resources affecting interpretations of data protection in complex technological contexts. Administrative practices in public procurement and AI deployment highlight interpretative patterns. Public authorities often interpret legal requirements narrowly, neglecting robust human rights impact assessments and transparency in algorithmic systems, which may weaken legal protections. The lack of judicial decisions on AI creates interpretative gaps; as Krivokapić et al. (2023) state, *“the lack of jurisprudence on AI-specific human rights challenges leaves significant ambiguity in how existing legal frameworks apply to novel technological contexts*.*”* Thus, interpretation relies heavily on administrative practice and policy implementation, often lacking transparency and accountability.

## Divergence from International Human Rights Standards

The hermeneutical analysis indicates significant divergences between regional human rights interpretations in AI and international standards, shaped by explicit policy choices and implicit patterns in the Western Balkans. The principle of transparency in algorithmic systems exemplifies these divergences. International standards highlight meaningful transparency in automated decision-making, while Western Balkan legal frameworks generally lack specific transparency requirements, creating gaps between international norms and regional practices (Hoxhaj, 2020).The principle of non-discrimination in AI systems also shows varied regional interpretations. While international standards call for proactive measures against algorithmic bias, regional frameworks typically adopt reactive approaches that inadequately address discrimination challenges (cited in Krivokapic et al., 2023). Lastly, the right to an effective remedy for rights violations in AI contexts is another area of divergence. International standards stress accessible remedies for automated system violations, yet, as noted by the SHARE Foundation (2024), remedial mechanisms in the Western Balkans remain underdeveloped, resulting in accountability gaps in AI governance. Divergences from international standards stem from capacity constraints and regional interpretations of human rights. EU integration processes may pressure alignment with European standards, potentially reducing these divergences. However, the European Western Balkans (2025) analysis shows persistent gaps between EU protections and regional implementations, posing challenges for human rights protections in AI contexts. The following figure 2 illustrates a model of the interpretative layers shaping AI governance in the Western Balkans, highlighting the interaction of international standards, regional contexts, and national implementations in forming unique frameworks.

Figure 2: Interpretative Layers in Western Balkans AI Governance

\*Note:This figure shows the three main layers of AI governance in the Western Balkans, illustrating the filtering of international standards through regional contexts and their varied national implementation.

## *Case Studies of AI Deployment*

## Facial Recognition Systems in Public Spaces

Facial recognition technologies in the Western Balkans pose significant challenges for human rights in AI governance, raising issues of privacy, surveillance, consent, and proportionality (see OECD, 2021). Serbia’s “Safe City” initiative in Belgrade employs extensive facial recognition systems supplied by Huawei, including numerous surveillance cameras (cited in Korac, 2021). In this project, however, the civil society organizations contested the legal basis for this deployment, citing inadequate privacy safeguards. According to the SHARE Foundation (2024), Serbia’s implementation lacked comprehensive impact assessments and public consultation, emphasizing security benefits over privacy, thus shaping human rights interpretations in favor of security objectives. Kosovo has explored facial recognition technologies for border control and law enforcement purposes, though with more limited implementation than Serbia (see KOHA, 2024). The ITS (2024) study additionally observes that *“Kosovo’s consideration of facial recognition technologies has occurred in a significant regulatory vacuum, with limited explicit legal frameworks governing biometric surveillance*.*”* This gap creates risks for arbitrary or disproportionate implementations that may undermine human rights protections. Montenegro has implemented facial recognition systems at border crossings, justified through security and tourism management objectives. The legal framework relies on border security legislation rather than AI-specific governance, posing risks to human rights safeguards. Key patterns include: prioritization of security objectives over privacy, inadequate governance of biometric surveillance due to lack of AI-specific laws, and limited transparency and public consultation hindering democratic oversight.

## Algorithmic Decision-Making in Public Services

The algorithmic systems in public service delivery in the Western Balkans highlight crucial issues of human rights protections in AI governance, particularly concerning transparency, non-discrimination, due process, and accountability (Hoxhaj, 2020). Social welfare systems in the region have adopted algorithms for eligibility, benefit calculations, and fraud detection (Krivokapic et al., 2023). Kosovo’s automated social assistance program raises concerns about transparency and accountability in these assessments (see ITS, 2024). The ITS (2024) study notes that *“Kosovo’s algorithmic social welfare systems lack transparency regarding decision criteria and appeal mechanisms, risking due process and accountability*,*”* prioritizing efficiency over transparency. Serbia’s algorithmic employment services also face issues of discrimination and transparency in job matching. Krivokapić et al. (2023) state, *“the lack of non-discrimination safeguards in employment algorithms risks reinforcing societal inequalities through automated decisions.”* North Macedonia has piloted algorithmic systems for educational administration, raising concerns about equality, transparency and human rights protections due to a lack of legal safeguards. Key patterns include prioritization of efficiency over transparency, absence of algorithmic impact assessments, and limited public awareness hindering informed consent.

**Cross-Border Data Flows and Regional Cooperation**

The cross-border movement of data for AI development is a key case study for human rights protections in regional AI governance, raising issues of jurisdiction and accountability (Shtupi & Prifti, 2025). Regional initiatives like the Open Balkan and the Berlin Process promote economic integration and data sharing, but legal standards for AI data remain unclear across borders. The European Western Balkans (2025) report highlights that while the EU has established frameworks like the GDPR, the Western Balkans lacks harmonized approaches, leading to regulatory gaps for AI. This disparity risks inconsistent protections for data used in AI systems. Commercial AI services, particularly from multinational companies, complicate the protection of human rights, with unclear legal standards when providers operate outside the region (Shtupi & Prifti, 2025). The Open Society Foundations Western Balkans (2024) report notes that the lack of harmonization in AI governance poses significant challenges for consistent rights protections in cross-border contexts. Several interpretative patterns emerge in cross-border contexts. Economic integration often prioritizes over harmonized rights protections, creating regulatory gaps. Weak regional coordination hinders consistent human rights approaches in AI governance. External actors like the EU and multinational tech companies shape the interpretation and implementation of rights principles. Figure 3 maps significant AI deployments in the Western Balkans, showing their geographical distribution and sectoral focus.

Figure 3: Map of AI Deployment Cases in the Western Balkans

\*Note: This figure maps key AI deployment cases across the Western Balkans region, highlighting significant applications in each country and their sectoral focus. The map illustrates the uneven development of AI implementation across the region, with Serbia showing more advanced applications while countries like Kosovo and Bosnia and Herzegovina remain at earlier stages.

## Challenges and Opportunities

The hermeneutical analysis of human rights protections in AI governance across the Western Balkans reveals significant challenges and opportunities for strengthening rights-centered approaches to technological regulation. Western Balkans countries struggle to balance technological advancement with human rights protections (Borici et al., 2025). Economic priorities push for rapid AI adoption, potentially outpacing regulatory frameworks. Serbia’s Strategy for the Development of Artificial Intelligence (see the AI Development Strategy of RS, 2019) seeks regional leadership in AI, prioritizing economic opportunities and innovation, but may conflict with comprehensive rights protections. Krivokapić et al. (2023) note that the focus on AI for development risks sidelining human rights. The belief that strong regulation hampers innovation influences the interpretation of human rights in AI governance, leading to limited protections and slow regulatory responses. The challenge is creating governance that safeguards rights while fostering innovation, requiring nuanced frameworks and institutional capacity. The EU integration process provides important external pressure for balancing development with rights protections, as alignment with EU standards becomes increasingly important for accession countries. The European Western Balkans (2025) analysis notes that *“the EU's rights-centered approach to AI regulation, embodied in the AI Act, creates significant pressure for Western Balkans countries to develop more comprehensive human rights protections in their AI governance frameworks.*” This external influence may help shift the balance toward stronger rights protections over time.

## Capacity Gaps in Regulatory Oversight

Significant capacity gaps in regulatory oversight pose a major challenge to human rights protections in AI governance across the Western Balkans (Borici et al., 2025). Limited resources, expertise, and enforcement capabilities hinder the effectiveness of legal frameworks, risking rights protections as AI systems are implemented. Data protection authorities struggle with capacity issues specific to AI. The ITS (2024) study on Kosovo notes that “limited staffing, technical expertise, and financial resources constrain the Information and Privacy Agency's ability to provide effective oversight of complex AI applications.” Similar constraints affect regional regulatory bodies, resulting in gaps between formal protections and practical implementation. The lack of technical expertise is a critical gap, as regulatory authorities often lack knowledge of AI systems and their human rights implications. This knowledge deficit hampers oversight, guidance development, and enforcement of protections. The SHARE Foundation (2024) states that "*the technical complexity of AI systems creates significant challenges for regulatory authorities with limited specialized expertise*." Enforcement capabilities also pose challenges, as authorities often lack the tools and resources to ensure compliance with human rights protections in AI (the SHARE foundation, 2024). Limited penalties, procedural barriers, and jurisdictional issues further impede enforcement effectiveness, threatening the translation of formal protections into practical safeguards. Addressing capacity gaps necessitates investment in institutional development and training.

The EU accession process offers resources for capacity building, but challenges in regulatory oversight of complex technologies persist.

**Regional Cooperation Potential**

Significant opportunities for enhancing human rights protections through regional cooperation on AI governance exist in the Western Balkans, given their shared experiences, geographical proximity, and EU integration aspirations. Current mechanisms like the Regional Cooperation Council and the Western Balkans Fund can foster unified approaches, evidenced by initiatives supporting research on AI and human rights (see RCC, 2025). The Berlin process initiative potentially enhanced coordinated digital governance despite its limited coverage (see the Berlin process, 2025). As noted by Krivokapić et al. (2023), “*regional economic integration initiatives create both opportunities and challenges for AI governance*.” EU integration provides external frameworks and encourages alignment with EU standards, leading to potential regulatory convergence, although national variations persist. The European Western Balkans (2025) report highlights that *“the EU’s comprehensive approach to digital governance... provides important reference points for regional cooperation on human rights protections*.*”* Enhanced regional cooperation could address key challenges such as cross-border data flows, regulatory gaps, and harmonized human rights interpretations in AI (Tikos & Krasznay, 2022). However, achieving this requires political will, institutional frameworks, and resources potentially hindered by competing priorities and regional tensions.

## Future Trajectories for Human Rights-Centered AI Governance

Multiple potential trajectories for human rights-centered AI governance exist in the Western Balkans, reflecting varying balances of technological advancement, human rights, regional cooperation, and international standards. The EU integration pathway is the primary external influence on AI governance, with countries aligning with EU frameworks like the AI Act and GDPR as they advance in accession negotiations. This suggests increased convergence with European standards, though variations will persist based on national contexts. A second trajectory is the development of national AI strategies, where countries, following Serbia's example, may incorporate explicit human rights protections.

The implementation of these strategies will significantly affect the interpretation and safeguarding of human rights in AI contexts. Regional cooperation initiatives present a third avenue for harmonized AI governance, enhancing human rights protections and addressing fragmentation through standards and capacity building.

Civil society engagement and public discourse on AI ethics represent a fourth avenue that could pressure governance frameworks to prioritize rights protections and transparency over development.

These trajectories are interconnected, reflecting complex interactions influenced by political priorities, institutional capacities, external factors, and societal values in the Western Balkans.

# Conclusion

This analysis of human rights protections in AI deployment in the Western Balkans highlights significant variations in regulatory approaches and capacities. Examining legal texts and cultural contexts reveals key findings for enhancing rights-centered technological regulation. The comparative analysis of six countries: Serbia, Bosnia and Herzegovina, North Macedonia, Albania, Montenegro, and Kosovo shows disparities in regulatory development. Serbia is developing AI governance frameworks, while Kosovo lacks dedicated laws, creating substantial regulatory vacuums that risk inconsistent human rights protections amid cross-border technological applications. Data protection frameworks are the most developed regulations for AI governance in the Western Balkans, with all six countries adopting laws aligned with the EU’s General Data Protection Regulation. However, these frameworks often lack specific provisions for challenges posed by AI systems, particularly in algorithmic transparency and accountability, creating vulnerabilities in human rights protections as technology evolves. A hermeneutical lens shows that cultural and societal contexts significantly influence the interpretation of human rights principles in AI governance. Regional values, post-socialist transitions, and public perceptions of technology shape the understanding of concepts like privacy and equality, actively constituting the meaning of human rights principles in this context. Textual analysis of legal provisions reveals significant variations in the definitions and applications of terms like “automated decision-making,” “algorithm,” and “profiling,” creating challenges for consistent human rights protections, especially in cross-border contexts. Case studies on AI deployment, including facial recognition and algorithmic decision-making, show patterns prioritizing security over transparency and gaps between legal protections and implementation, posing risks to human rights. Additionally, capacity gaps in regulatory oversight, due to limited resources and expertise, hinder effective legal frameworks and necessitate investment in institutional development and regulatory tools. Opportunities for strengthening human rights protections in AI governance exist in the Western Balkans. The EU integration process offers incentives for developing regulatory approaches aligned with European standards. Regional cooperation mechanisms can facilitate coordinated cross-border strategies. Civil society organizations are crucial in shaping discourse, monitoring implementation, and advocating for stronger protections. Effectively leveraging these opportunities could significantly enhance human rights as AI systems evolve. Policy recommendations include: Western Balkans countries should create AI governance frameworks with specific human rights safeguards, including algorithmic impact assessments, transparency in decision-making, and remedies for rights violations. Strengthening regional cooperation through coordination mechanisms, harmonized regulations, and capacity-building initiatives can address cross-border challenges and promote human rights protections, with the Regional Cooperation Council facilitating these efforts. Third, regulatory capacity must be strengthened through investment in resources, expertise, and enforcement tools. Data protection authorities need adequate staffing and specialized knowledge for effective oversight of complex AI systems, with support from international partners like the EU. Fourth, civil society engagement in AI governance should be expanded through funding for research, advocacy, and public education, enhancing oversight and accountability. Fifth, human rights impact assessments should be mandatory for significant AI deployments, particularly in the public sector, addressing issues like privacy and non-discrimination with public consultation. The hermeneutical approach underscores the role of interpretative contexts in shaping human rights principles in AI governance, indicating that enhancing protections requires attention to both legal provisions and their contextual interpretations. As AI technologies evolve in the Western Balkans, the need for strong human rights protections becomes urgent. The region’s unique context-marked by post-socialist transitions, EU integration, and historical legacies-presents challenges and opportunities for rights-centered technological governance. This study aims to enhance AI governance approaches that protect fundamental rights while fostering technological development. Future research could explore how interpretations of human rights in AI governance evolve, particularly with EU integration and new technologies. Studies may also examine the experiences of those impacted by AI systems, enhancing understanding of rights protections in practice and the interplay between technology, regulation, and human rights.

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***Authors’ contribution***

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