
EVOLUTION OF HUMAN RIGHTS AND TECHNOLOGY – A JURISPRUDENTIAL PERSPECTIVE

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ABSTRACT

The evolution of human rights has always studied on the changes in society, and with the rise of technology, new dimensions of rights have emerged. Traditional rights such as privacy, freedom of expression, and equality now extend into digital spaces, shaping concepts like data protection, internet access, and cyber security. Technology has allowed individuals by improving access to information, education, and communication, but it has also created challenges such as surveillance, misuse of personal data, and digital inequality. Law plays a crucial role in balancing these developments by protecting human rights in the digital age. The interaction between human rights and technology highlights the need for continuous adaptation of legal frameworks to ensure that human dignity, freedom, and justice are preserved in an increasingly technological world.

Keywords: Human rights, Digital rights, Cyber security, Surveillance, Justice in digital age

I. Introduction

Human rights represent the inherent dignity and equal worth of every human being. They are universal, inalienable, and indispensable for the development of individuals and societies. Historically, the recognition of human rights has evolved through various phases—beginning with natural rights theories, constitutional guarantees, and international frameworks such as the Universal Declaration of Human Rights (1948). With the passage of time, these rights have expanded from civil and political freedoms to include social, economic, cultural, and environmental rights. The rise of technology has added a new dimension to this evolution. The Industrial Revolution highlighted labor rights and workplace protections, while the information age brought challenges of privacy, freedom of expression, and access to knowledge in the digital sphere. In the 21st century, emerging technologies such as artificial intelligence, biotechnology, surveillance systems, and big data analytics have created both opportunities and threats to human rights. On one hand, technology promotes transparency, connectivity, education, and access to justice. On the other hand, it raises serious concerns about data protection, cyber security, algorithmic discrimination, and the widening digital divide. Therefore, the evolution of human rights in the age of technology requires continuous legal adaptation and international cooperation. It underscores the importance of developing ethical frameworks and strong regulatory mechanisms to ensure that technological progress aligns with the fundamental principles of human dignity, equality, and justice.

II. Review of literature

1. Evolution of the Right to Privacy in India: Constitutional Perspective and Judicial Approach, by Anupam Kurlwal & Shreyansh (2024), traces how Indian courts moved from rejecting privacy claims (M.P. Sharma, Kharak Singh) to recognitions culminating in K.S. Puttaswamy.⁽¹⁾ It shows how dignity, autonomy, and liberty theories under natural law have been translated into constitutional interpretation.¹

2. Data Colonialism: Re-examining Digital Sovereignty and Privacy in India's Cyber Jurisprudence, by Amit Kumar Singh (2025), examines "data colonialism" how foreign corporations and state surveillance intersect to threaten informational autonomy. (2) It argues

¹ Anupam Kurlwal & Shreyansh, Evolution of the Right to Privacy in India: Constitutional Perspective and Judicial Approach, 2024, ShodhKosh: J. Visual & Performing Arts, vol. 5, no. 4.

for reforms such as data localization, indigenous cloud infrastructure, and stronger enforcement to protect sovereignty and individual privacy rights.²

3. Al, Bias, and the Constitution: A Jurisprudential Analysis of Algorithmic Inequality under Article 14, by Ayushi Shreya (2025), examines how algorithmic systems violate constitutional equality in India, particularly under Article 14.(3) The paper highlights opacity (“black box” models), lack of bias audits, and absence of legal recognition of “algorithmic discrimination” as an autonomous constitutional wrong.³

III. History of the study

The jurisprudential trajectory of human rights in relation to technology reflects a constant negotiation between theories of natural law, legal positivism, and critical legal studies. In the ancient and classical era, societies operated on principles that echoed natural law. Ideas of dignity, justice, and fairness were understood as inherent to human existence, rooted in moral and religious codes such as Hammurabi’s Code or Roman law. Even though not articulated as "rights" in the contemporary sense, they embodied the natural law idea that there is a justice beyond institutions, and that law must comply with moral order.

Then, the Enlightenment and Industrial Revolution of the 17th–19th centuries re expressed natural law through Locke, Rousseau, and Kant, who stressed liberty, equality, and the social contract. Followed positive legal acknowledgment, in documents such as the Magna Carta, the English Bill of Rights, and the French Declaration of the Rights of Man, proving positivism's impact on codifying abstract natural law precepts into legislated statutes. The Industrial Revolution revealed, however, the shortcomings of natural law and positivism because exploitative labor systems flourished under "legal" systems. Early criticism, prefiguring critical legal studies, manifested in movements of reform, labor legislation, and socialism theory challenging whether law ever represented justice or was simply perpetuating economic structures of power.

The 20th century, with international wars and reconstruction, placed emphasis on the interplay of jurisprudence schools. The Universal Declaration of Human Rights (1948) embraced natural

² Amit Kumar Singh, Data Colonialism: Re-examining Digital Sovereignty and Privacy in India’s Cyber Jurisprudence, *Int’l J. Law Just. Jurisp.* 2025;5(2):196-203

³ Ayushi Shreya, Al, Bias, and the Constitution: A Jurisprudential Analysis of Algorithmic Inequality under Article 14, *Indian Journal of Legal Review*, 5(10) 2025, pg. 872-879.

law ideals of inherent dignity at the same time that it was a positivist model in its universal codification by international institutions. The technological atrocities of nuclear war, medical experimentation, and autocratic abuse of law, though, opened the way to critiques typical of critical legal studies, which raised the question of whether positive law could actually protect human dignity or whether law merely mirrored dominant power interests. Jurisprudence during this period struggled with resolving universal moral claims with enforceable legal means, underscoring shortcomings in state-based positivism.

By the late 20th century, with the information age, jurisprudence was faced with emerging digital rights issues including privacy, expression, and intellectual property. Positivist replies were in the shape of global and local legislation that governed cyberspace, whereas natural law theories supported arguments for human dignity concerning freedom of expression as well as autonomy of individuals within cyberspace. Critical legal scholars raised the issue of whether digital rights regimes served corporate interests and dominant states, and thus access and freedom were skewedly distributed, thereby replicating inequalities in the name of "neutral" regimes.

In the 21st century, the era of AI and digital has intensified these jurisprudential tensions. Natural law arguments hold that technological regulation has to uphold inherent human dignity, justice, and equality and act as a moral guide for new areas of study such as AI ethics and bioethics. Positivist reactions have been the form of specific regulatory frameworks, like the Europe's General Data Protection Regulations, which enshrine data protection and privacy into positive law. Meanwhile, critical legal studies pose significant questions: Does big data consolidate surveillance capitalism? Does AI replicate systemic biases behind the seeming objectivity of algorithms? At this juncture, critical methods question the presupposition of legal regulation being enough to deliver justice, demanding closer examination of structural inequities built into digital systems.

Therefore, in each successive stage of history, the development of human rights and technology illustrates the dynamic utilization of natural law ideals as a source of normative principles, positivism as an institutional codification mechanism, and critical legal studies as an eternal critique of the complicity of law within systems of power. In combination, these schools of thought develop a jurisprudential conception of rights that responds to the moral, legal, and technological issues of each era.

IV. Objectives of the study

1. To trace the historical development of human rights and examine how technological progress has influenced their scope.
2. To analyze the impact of technology (industrial, digital, and AI revolutions) on the recognition and enforcement of human rights.
3. To study the challenges posed by technology, such as surveillance, data misuse, digital divide, and cybercrimes, in relation to human rights.

V. Research Methodology

Researchers draw from literature, art, history, and social movements alongside legal analysis to understand how empathy, dignity, justice, and lived experience shape both the substance and practice of rights. Methods now include storytelling, comparative case studies, data about suffering and resilience, and participatory action approaches; these make the study of human rights relatable, meaningful, and ethically anchored. Integrating human perspectives, researchers consider the struggles behind historic breakthroughs from the Enlightenment to abolition, constitutional reforms, and civil rights activism giving voice to those often marginalized and ensuring that the evolution of rights is not just a technical progression but a deeply social, ethical, and emotional journey. This humanized methodology encourages reflection on empathy, compassion, and the universal quest for fairness promoting research that not only studies change but also inspires it.

VI. Analysis of the study:

The relationship between human rights and technology reflects one of the most dynamic challenges of jurisprudence in the 21st century. Historically, human rights were justified by natural law as inherent in human dignity, and later secured through positivist codification in constitutions and international instruments such as the Universal Declaration of Human Rights, 1948. With the rise of digital technologies, these theories face new tests, as technology both enhances and threatens fundamental freedoms. From the natural law standpoint, privacy, autonomy, and equality must remain inalienable, yet digital surveillance, biometric profiling, and algorithmic bias increasingly compromise these values. Positivism, on the other hand, emphasizes enforceability, which explains the proliferation of legal regimes such as the EU's

GDPR or India's Digital Personal Data Protection Act, codifying rights like informational privacy and the right to be forgotten. Yet, positivism is reactive; legislation often lags behind rapid technological innovation. Sociological jurisprudence provides a more adaptable model, focusing on balancing interests—between liberty and security in surveillance policies, freedom of expression and prevention of misinformation on digital platforms, and efficiency of AI against risks of discrimination.

Critical and postmodern perspectives further reveal how technology reinforces structural inequalities, for example, through the digital divide that excludes marginalized communities from socio-economic opportunities or algorithmic systems that replicate racial and gender bias. Courts globally, and particularly in India, have responded by expanding constitutional rights to fit the digital context. In *Justice K.S. Puttaswamy v. Union of India* (2017), the Supreme Court recognized privacy as a fundamental right under Article 21, embedding natural law values of dignity into binding constitutional interpretation. Similarly, in *Shreya Singhal v. Union of India* (2015), the Court struck down Section 66A of the IT Act for violating free expression, reaffirming liberty in the digital sphere. Internationally, the UN Human Rights Council has declared internet access a human right, while OECD and UNESCO have initiated frameworks on AI and digital governance, reflecting sociological and critical jurisprudential concerns. Technology also acts as an enabler of rights, democratizing information, expanding education through online platforms, promoting health through telemedicine, and facilitating participatory governance through e-democracy—developments resonating with Roscoe Pound's "law as a tool of social engineering." Yet, the challenges remain stark: balancing security with liberty in counter-terrorism surveillance, ensuring fairness and accountability in AI systems, and bridging the digital divide to secure substantive equality.

Jurisprudentially, the evolution of human rights in the digital era demands a synthesis—natural law provides moral grounding, positivism ensures enforceability, sociological theory balances competing interests, and critical perspectives guard against systemic injustices. The future of rights therefore depends on whether law can keep pace with technological transformation without sacrificing its core purpose: the preservation of human dignity.

International human rights discourse has similarly evolved in response to technological change. The UN Human Rights Council in 2016 recognized internet access as a human right, while UNESCO and the OECD have developed frameworks on AI ethics and digital governance.

These initiatives represent attempts at embedding sociological and critical jurisprudential concerns into global regulatory structures. In Europe, the Court of Justice of the European Union has developed the doctrine of the “Right to be Forgotten” in *Google Spain SL v. AEPD* (2014), reflecting the adaptation of traditional dignity-based rights to new technological realities. In the United States, debates remain fragmented due to the absence of a comprehensive federal privacy law, reflecting a more positivist and market-driven approach. In China, the cyber sovereignty model demonstrates how technology can be harnessed by states to prioritize collective control over individual systems.

VII. Recent Development in the Concept of Human rights and technology

Recent developments at the intersection of human rights and technology highlight both progress and challenges. In the UK, the government is preparing a major overhaul of human rights laws, particularly affecting immigration and asylum rights, sparking concerns about compliance with the European Convention on Human Rights. At the same time, Sainsbury’s has begun trialing facial recognition technology in its stores to prevent shoplifting, raising debates over privacy and algorithmic bias. Globally, regulatory tensions are growing—the U.S. Federal Trade Commission recently warned Big Tech companies not to apply the EU’s Digital Services Act in ways that could undermine American free speech protections. Similarly, the UK’s new age-verification law for adult websites, requiring facial scans or ID uploads, has led to unintended consequences such as traffic shifts to unregulated platforms and concerns about censorship and data misuse. Meanwhile, Australia has taken a proactive step by creating an Office for Artificial Intelligence in New South Wales to oversee ethical and trustworthy AI in public services. Together, these developments show how rapidly evolving technologies are reshaping the legal and human rights landscape worldwide. The concept of zero FIR had become a recent trend in India, but the implementation in using it and limitation of the concept was under developed. If so it is been introduced with proper guidelines in India, the concept of human rights would have been developed.

VIII. Legal Framework

The legal framework of human rights in relation to technology, when viewed through the lens of jurisprudence, combines international instruments, constitutional guarantees, statutory laws, and judicial interpretations to safeguard individuals against technological abuses. At the international level, the Universal Declaration of Human Rights (1948), ICCPR (1966), and

ICESCR (1966) lay the foundation, while specific treaties like the Convention on the Rights of the Child (CRC) and the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) are increasingly applied to digital contexts. The General Data Protection Regulation (GDPR) of the European Union is a landmark in protecting digital privacy and regulating the use of personal data, and globally, debates continue on recognizing internet access and data protection as fundamental human rights. In India, the Constitution plays a central role: Article 21 (Right to Life and Personal Liberty) has been judicially expanded to include the right to privacy (*K.S. Puttaswamy v. Union of India*, 2017) and internet access has been linked with the right to education and free speech. Statutory frameworks include the Information Technology Act, 2000 (amended in 2008), the Protection of Human Rights Act, 1993, and emerging data protection legislations. The judiciary has also played a proactive role, striking down Section 66A of the IT Act in *Shreya Singhal v. Union of India* (2015) to protect free expression online, and recognizing the right to be forgotten in recent judgments. From a jurisprudential perspective, positivist theory supports codified cyber laws, sociological jurisprudence emphasizes law's adaptation to technological realities and natural law highlights inherent dignity in the use of AI and biotechnology, and utilitarian approaches seek balance between national security and individual liberty. Together, this legal framework represents a dynamic and evolving response to the challenges posed by technology, ensuring that human rights are not eroded but strengthened in the digital age.

IX. Challenges Faced

The protection of human rights in today's technological world faces several challenges that the law tries to tackle. One major issue is the conflict between security and freedom. Governments often justify mass surveillance and data collection for national security, which undermines privacy rights. The digital divide creates inequality since many marginalized groups have limited access to technology, raising concerns about equal enjoyment of rights. New technologies like artificial intelligence, facial recognition, and predictive policing can lead to algorithmic bias and discrimination, and existing legal systems often struggle to regulate these issues.

Furthermore, the lack of consistent global standards in data protection and cyber laws makes it hard to enforce rules across borders, creating gaps that can be exploited. In countries like India, outdated laws, such as parts of the Information Technology Act, cannot effectively address

modern issues like cyberbullying, deepfakes, and digital harassment. Another significant challenge is finding the right balance between innovation and ethics, especially in fields like biotechnology, genetic engineering, and digital health, where advancements often outpace existing regulations. Corruption, misuse of technology by politicians, lack of awareness among citizens, and weak enforcement create additional barriers to effective protection.

From a legal standpoint, these challenges reveal the gap between established laws and the needs of society. This situation requires a dynamic interpretation of laws and the development of techno-jurisprudence that connects human rights with the realities of technology.

X. Conclusion

The evolution of human rights shows that law must constantly adapt to social and technological change. From natural rights in early societies to digital rights in today's information age, every phase of technological progress has reshaped the meaning and scope of human dignity, liberty, and equality. While technology has empowered individuals through better access to knowledge, communication, and opportunities, it has also created new risks such as surveillance, data misuse, and digital inequality. Therefore, the role of law is crucial in striking a balance between innovation and protection of fundamental rights. Going forward, stronger international cooperation, ethical governance of emerging technologies, and people-centric legal frameworks are essential to ensure that technology serves humanity rather than undermines it. Though there where several laws and legislations been introduced to promote the welfare of the people in the state, where people still used to unaware of those laws and legislations in India. So it is the primary duty of the judiciary and students learning law to promote those laws and legislations in India. Human rights remain a living framework, shaped by historical experiences and present challenges, with the universal goal of ensuring everyone's freedom, justice, and well-being as societies evolves.

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