Chapter 12
AI and Sustainability: Combining Ethics With Environmental Impact Assessment

Usharani Bhimavarapu
https://orcid.org/0000-0001-5050-0415
Department of Computer Science and Engineering, Koneru Lakshmaiah Education Foundation, Vaddeswaram, India

ABSTRACT

The broad scope of applications of artificial intelligence (AI) in many fields has also raised important issues concerning responsible practice and sustainability of the environment. In the current research, designing ethical AI systems and their impact on the environment are argued with a deliberate effort at embracing responsible and sustainable technology. Information were collected from the site under construction via a preprocessed systematic investigation for validity and processed later using Particle Swarm Optimization (PSO) with feature selection in mind. Bi-stacked Gated Recurrent Unit (GRU) has been utilized to feature extract of temporal patterns within ethics and environmental features to facilitate predictive analysis and identify possible biases. The conclusion highlights the need to reconcile fairness, transparency, and accountability of AI systems with their carbon footprint.

INTRODUCTION

Morality-based development of AI is the designing and development of AI systems based on justice, morality, and the betterment of society. Since AI is being used extensively in day-to-day life, choices made by these machines have far-reaching effects on a group or an individual of individuals. Such bias in AI systems can lead to greater discrimination if unchecked. Transparency in decision-making

DOI: 10.4018/979-8-3373-4652-6.ch012

is extremely important in keeping it trustworthy and accountable. Ethical AI is a matter of respect for privacy and data protection. Ethical standards keep discrimination out of recruitment, the police force, and the healthcare system. Ethical AI ensures inclusivity and diversity of thought. Ethical standards are required so that the weaker sections of the citizenry are not inadvertently harmed by AI. Developers, policymakers, and researchers need to collaborate to formulate transparent ethical standards. Ethically AI is a social responsibility and not one prescribed by policymakers. Data-driven AI depend on data, which can be itself inherently historically biased or unrepresentational.

Bias will get amplified if not contained appropriately and result in discriminatory outcomes. One example is that hiring software would be biased towards others if skewed historical employment statistics. Fairness methods must be used in accountable AI development, such as bias detection and correction tools. Programmers must vet frequently for unseen effects on AI systems. Data sets must have varied populations to offset bias. AI bias affects not only individuals but also unity and trust in technology. Transparent visibility of AI decision-making allows stakeholders to accept possible bias. Ethically designed training for AI helps engineers identify and reduce biased patterns. Avoidance of bias is actually a key objective of ethical AI. Accountability makes developers and organizations responsible for the effects of AI systems. Transparent AI systems allow stakeholders to view the rationale behind automated decisions.

This prevents abuse or unintended harm caused by black-box algorithms. Logically documenting AI decision-making helps in reproducing and credence. Ethical AI systems are typically tested on a regular basis and for compliance. Clear consent and public education are possible by transparency, especially in such sensitive applications as in the healthcare industry. Through AI-decision-transparency, organizations can just rectify mistake or injustice. Accountability mechanisms are improving the ethical landscape in tech companies. Transparency can be harnessed by policymakers to facilitate rules and ethical behavior. Finally, transparency and accountability protect people and society. Human-oriented AI centers on human flourishing, using technology for social and ethical purposes. The intent is to augment human capability, not replace it.

AI must facilitate decision-making without concession in autonomy or human judgment. Ethical AI starts human-machine interaction with safe ethical stewardship in human hands. Human-centered design also centers on accessibility to enable all with technology. Engage stakeholders, including end-users, in attempting to understand needs and issues. Ethical AI avoids manipulation or exploitation, especially social and behavior applications. Human-centered practices help guarantee that AI promotes human-centered development and well-being. Social and long-term effects of AI application should be considered by developers. Human-centered ethical AI