Ethical Case Study Analysis:
Artificial Intelligence

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Artificial Intelligence (AI) and Generative AI represent one of the most transformative and controversial technological developments of the 21st century. From personalized chatbots to generative image software and autonomous systems, AI is rapidly influencing how we live, learn, and work. Alongside these innovations come serious ethical and societal concerns. This case study will analyze the ethical implications of Generative AI using key concepts of critical thinking. The analysis includes current uses of AI, policy considerations, and how this issue intersects with my future role as an information security specialist. Finally, I offer recommendations to address these challenges and reflect on critical thinking.

Artificial Intelligence refers to the ability of machines or computer systems to perform tasks that would typically require human intelligence like understanding language, recognizing patterns, or making decisions. Generative AI, a subset of AI, can create new content such as text, images, music, or even software code based on input data and patterns learned through machine learning algorithms. Today, tools like ChatGPT, DALL·E, and Midjourney are being used across education, media, business, and healthcare sectors. While these tools increase productivity and innovation, they also raise complex ethical questions regarding misinformation, bias, privacy, job displacement, and security vulnerabilities.

## Ethical implications

A key ethical concern is the potential of Generative AI to produce misleading or harmful content. In the YouTube video *“AI Ethics: A Critical Introduction”* (Research Trends, 2023), experts highlight that generative models can create convincing fake news, synthetic media (deepfakes), and content that can be weaponized for misinformation or political manipulation. The use of AI in content generation challenges our traditional notions of authenticity and truth. From a critical thinking perspective, we must analyze the implications of AI-generated content using intellectual standards such as accuracy, clarity, and relevance (The Foundation for Critical Thinking, n.d.). We must also evaluate sources with skepticism and question whether what we see or read was produced by a human or a machine.

Another pressing ethical issue is bias. As discussed by Furze (2023), AI systems are trained on vast datasets that reflect human biases and systemic inequalities. As a result, these systems often reinforce existing stereotypes such as biased language about race, gender, or socioeconomic status. Furze argues that ethical AI education must go beyond simply teaching how to use the tools and instead foster discussions about fairness, accountability, and transparency. As a future information security specialist, I must critically assess the sources of data used to train AI models and advocate for diverse and representative data sets to prevent discriminatory outcomes.

Privacy is also under threat due to AI’s capacity to collect and analyze massive amounts of personal data. According to Huang et al. (2023), Generative AI models like large language models (LLMs) may unintentionally memorize and regurgitate sensitive user data during conversations or outputs. This creates risks for data breaches, identity theft, and unauthorized surveillance. In my future role, I will need to implement robust security policies that address AI-specific threats, ensure encryption and data anonymization, and align with legal frameworks like GDPR or CCPA. Policymakers must also regulate how organizations collect, store, and use data to build AI models and develop clear standards for consent and data minimization.

In addition, another significant concern is the erosion of human skills and the potential displacement of workers. AI systems can write essays, generate code, and even analyze legal documents. While this increases efficiency, it also risks replacing roles that rely on critical thinking, creativity, or routine cognitive tasks. This trend reinforces the need to integrate ethical and critical thinking training into education and professional development, as emphasized in the TED-Ed video *“What is Critical Thinking?”* (TED-Ed, 2016). Rather than simply competing with AI, individuals must focus on uniquely human skills like moral reasoning, empathy, and ethical judgment.

## Possible Solutions

To face these challenges, I recommend that institutions adopt ethical frameworks that prioritize transparency, fairness, and accountability in AI development. Second, professionals across all industries like those in cybersecurity must receive training in AI ethics to identify vulnerabilities and ensure compliance with evolving regulations. Third, AI tools should include built-in mechanisms for auditability and bias detection. And finally, the most important aspect is that society must be educated to use AI critically, questioning its outputs and understanding its limitations.

## Conclusion

In this essay I applied critical thinking by questioning assumptions, considering multiple viewpoints, and examining the consequences of AI from both technical and human perspectives. For example, rather than accepting AI-generated content as objective, I investigated how biases are embedded and how misinformation can be spread. I also evaluated the long-term consequences of unchecked AI use and proposed actionable solutions based on ethical reasoning.

In conclusion, the rise of Generative AI presents both groundbreaking opportunities and serious ethical risks. From misinformation to privacy breaches and workforce disruption, these challenges demand careful consideration. By using critical thinking, we can better understand the implications of this technology and develop thoughtful, responsible responses. As I pursue a career in information security, I recognize that protecting digital systems also means advocating for ethical standards, transparent policies, and inclusive practices in AI development. Staying informed, questioning assumptions, and promoting accountability can help ensure AI is used to enhance society rather than harm it.

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