World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(REVIEW ARTICLE)

Check for updates

Ethics in Programming: Maksim Makarov on the Developer's Responsibility

Maxim Makarov *

Software Developer, Russia.

World Journal of Advanced Research and Reviews, 2025, 28(02), 2620-2623

Publication history: Received 06 October 2025; revised on 19 November 2025; accepted on 29 November 2025

Article DOI: https://doi.org/10.30574/wjarr.2025.28.2.3879

Abstract

The article explores the ethical aspects of artificial intelligence development in programming, emphasizing the need for responsible practices and consideration of social consequences. The goal of the research is to develop ethical standards and principles for AI development, ensure transparency and accountability, and promote a fair distribution of benefits. The study results can be applied in practice to create a more responsible and transparent development process.

Keywords: Artificial Intelligence; Ethics in Programming; Responsible Development; Transparency; Social Consequences; Interdisciplinary Approaches to Ethics; Coding Ethics

1. Introduction

In recent years, ethical issues in programming have become increasingly relevant. The development of technology and society's growing dependence on software have made developers responsible not only for the quality and functionality of their products but also for their impact on society, as well as for the actions and decisions that may have far-reaching consequences. Unfortunately, examples of ethical violations in programming are not uncommon. Therefore, a specialist must consider not only the technical aspects of development but also the social, economic, and moral consequences of their decisions. This includes:

- Ensuring the security of user data and preventing information leaks.
- Honesty in claims about the software's functionality and capabilities.
- Respect for the rights and freedoms of users, their privacy, and the non-exploitation of their data for personal gain.
- Considering the social consequences of decisions, i.e., not creating software that could harm society.

We are at the dawn of the generative AI era in programming. Therefore, opinions and ideas may still be evolving, and the perspective on programming without its use is more nuanced. There is substantial evidence showing how beneficial it can be, but further clarification, improvement, and education on GenAI tools are necessary. The key point is that this depends on the ethical principles set by educational institutions and industries, while programmers must adhere to responsible programming practices.

One of the fundamental questions that continues to be discussed is whether it is ethical to include AI-generated code in software projects without disclosing its origin. Among the potential causes of ethical concerns is the following: a software programmer using generative code presents the code as if it were their original work. While this may seem problematic when proper credit is not given when using code, this practice may not be as unusual as it seems.

Programming is a multifaceted discipline that thrives on collaboration and the accumulated knowledge of the software development community. The belief that every line of code must be written from scratch is not only unrealistic but also

* Corresponding author: Maxim Makarov

inefficient. The true value of code lies in its ability to perform the tasks it was designed for, its robustness against errors, its readability, and its reusability.

Ethical considerations also arise regarding disclosure. Generally, when reusing code, disclosure is an inherent part of the code, accessible to those who carefully examine it. Programmers are rarely required to provide a detailed list of all components used unless legal requirements dictate otherwise. However, certain circumstances, such as legal provisions or specific industry standards, may require it. The central point of the debate about code reuse is not the act of reuse itself but the level of transparency that should be maintained. Transparency is vital when reusing code, not only to maintain trust among developers but also to ensure proper attribution, especially when using open-source materials.

Code generation may pose ethical problems in scenarios such as certain academic assignments or coding assessments during job interviews. However, its use may be appropriate and even beneficial in other contexts, such as creating Proofs of Concept or for educational purposes, provided it is used transparently and in accordance with established rules. Educational institutions or employers should establish clear policies on this issue. If rules explicitly prohibit the use of generative code without proper attribution, then its use would indeed be unethical .

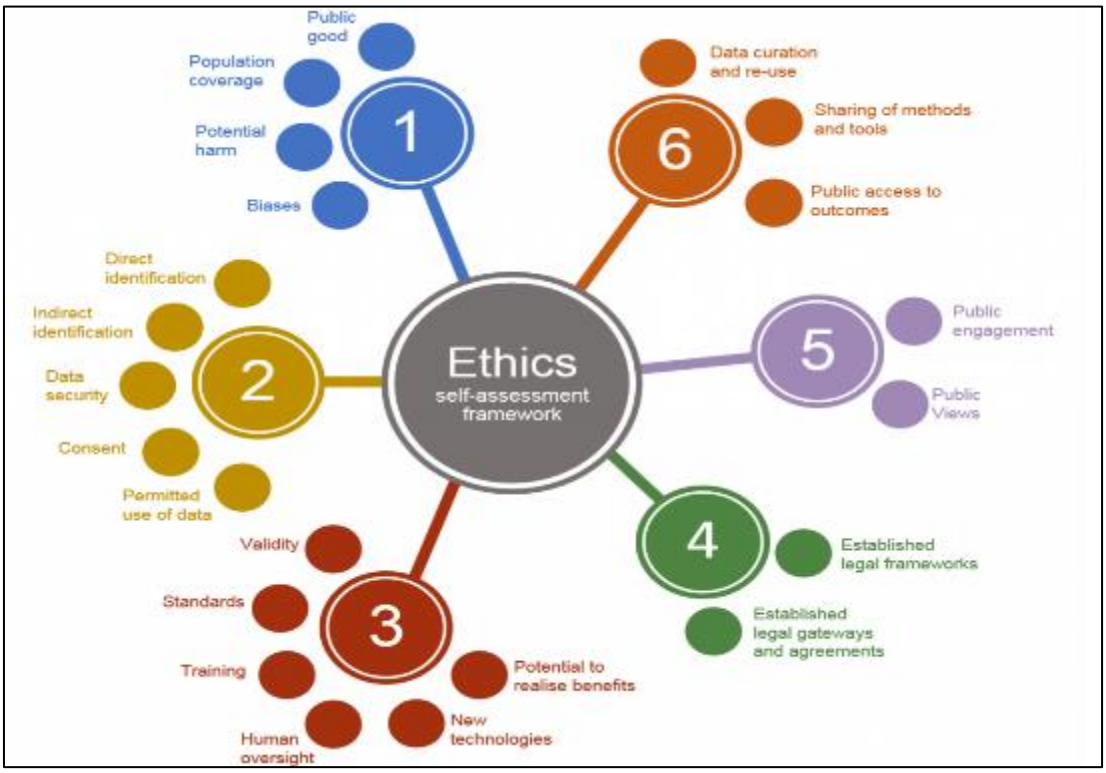

Figure 1 Ethical Factors in Software Engineering

As artificial intelligence transforms marketing, issues of ethics and social responsibility are becoming increasingly urgent. To address these challenges, developers and all stakeholders must collaborate to ensure development is guided by transparency, accountability, and fairness. AI should be used to create a better world, not just to increase efficiency . To achieve this, the following is necessary:

- Develop and implement ethical standards and principles for artificial intelligence;
- Ensure transparency in the algorithms and models used in marketing;
- Create mechanisms for monitoring and accountability in AI use;
- Consider social and cultural factors when designing and implementing AI systems;
- Ensure the fair distribution of benefits from AI usage.

Only through joint efforts and responsibility can we create a future where AI is used for the benefit of society, not just for profit.

Developers are largely aware of the ethical landscapes they must navigate and the moral dilemmas they personally face. However, they are often confronted with limited and inconsistent resources for ethical guidance or training. Significant barriers hinder the development of ethical wisdom within the AI developer community, including the industry's fixation on innovation, a narrow focus on technical practice, limited opportunities for reflection and dialogue, and incentive structures that prioritize profit and prestige. Therefore, it is essential to address the ethical skill gap that is specific to the developer community .

Figure 2 Sources developers turn to for guidance on ethical questions

To achieve the set goals, several measures need to be applied. These include developing and implementing ethical education programs and guidelines tailored to the specific needs of AI developers. It is essential to create platforms for dialogue and reflection that allow the discussion and resolution of moral dilemmas. Moreover, incentive structures that encourage ethical behavior and accountability should be developed. Increasing the representation and influence of ethical experts in the professional community is also crucial. Additionally, tools and methodologies that help developers make ethical decisions in their work need to be designed and implemented.

At the same time, it is worth questioning the exclusive connection of practical reasoning to the field of ethics. Upon analyzing examples, we can see that other areas of common sense and programming languages also contain important elements. Thus, we move toward the idea that practical reasoning cannot be derived solely from ethics but must open up to exploration through the multiplicity of philosophical discussions. In particular, fields such as logic, epistemology, metaphysics, and philosophy of language play an essential role in shaping practical reasoning. For example, logic helps developers analyze and evaluate arguments, epistemology helps them understand the limits of knowledge and uncertainty, metaphysics helps them grasp the nature of reality, and philosophy of language helps them comprehend the role of language in shaping our understanding of the world.

Programming languages like Python, Java, and C++ also require logical thinking, analysis, and synthesis, as well as the ability to abstract and model. Therefore, research must be interdisciplinary and take into account the plurality of philosophical discussions and fields of knowledge. Only through such research can we fully understand practical reasoning in general and ethics in particular, as well as their role in development.

Figure 3 Major Ethical Issues in Software Development

Thus, the development of artificial intelligence has raised numerous ethical issues in the field of programming. Society's growing dependence on software has increased the responsibility of developers, not only for the quality and functionality of their products but also for their societal impact.

2. Conclusion

This study emphasizes that ethical responsibility in programming is essential in the context of rapidly evolving artificial intelligence and society's increasing dependence on software systems. The analysis shows that transparent code reuse, responsible application of generative AI, and adherence to clearly defined ethical standards are critical for maintaining trust, accountability, and fairness in development practices. The findings also highlight the importance of interdisciplinary perspectives—particularly logic, epistemology, metaphysics, and philosophy of language—in strengthening practical reasoning and improving decision-making among developers. Establishing consistent institutional guidelines, expanding ethical training, and creating mechanisms for oversight will help address existing gaps in ethical competence within the developer community. Overall, this research contributes to the formation of more responsible programming practices and supports the development of AI systems that provide long-term societal benefit and promote sustainable technological progress.

References

[1] Atemkeng, M., Hamlomo, S., Welman, B., & Oyentunji, N. *Ethics of Software Programming with Generative AI: Is Programming without Generative AI always radical?* – 2024.

[2] Ferrell, O. C., & Ferrell, L. *Building a Better World: The Role of AI Ethics and Social Responsibility.* – Journal of Macromarketing. – 2024.

[3] Griffin, T. A., Green, B. T., & Welie, J. *The Ethical Wisdom of AI Developers.* – AI and Ethics. – 2024.

[4] Veiga, I. *The Ethics and the Practical Reasoning: About Common Sense and Programming.* – Daímon. – 2019.