# History of Computer Ethics and Its Evolution Over Time

**Origin of Computer Ethics**

Computer ethics as a field of study has its roots in **cybernetics**, a concept pioneered by **Norbert Wiener** in his book *The Human Use of Human Beings* (1950). Norbert Weiner was one of the first scholars to explore the implication of automation, artificial intelligence, and Human-machine interactions on ethics. He realized that technological advancements in fields such as automation would have intense social and moral effects. When the integration of computer into society became high questions arose about their impact on human labour, and the extent to which they should be trusted enough to make decisions. Weiner laid the foundations for discussions related to the ethics of using computers and technology.

**Social and Cultural Context of Computer Ethics**

The emergence of computer ethics started as a result of the rapid development of computing technology during the mid-20th century in response to post-war industrial expansion. There has been a raise of concerns about the increasing use computer in business, government and military raised concerns about ethics. In a time when human were becoming increasingly reliant on computers, wiener played a key role in framing ethical discussions about automation, privacy, and human dignity. During this period, the world was witnessing a transition from manual labour to automation, with many industries adopting computing technology to increase efficiency and productivity. This shift sparked fears about unemployment because people felt soon companies swill need less humans, violation of privacy, and the loss of human oversight in decision-making processes. During the Cold War, improvements in computers enabled government monitoring, employment automation, and early artificial intelligence research, raising questions about how technology might be utilised responsibly. Nations aimed to create computerised tools for intelligence collection, military strategy, and economic planning. As computers advanced, ethical concerns grew to encompass data security, disinformation, and the possibility of totalitarian control via digital monitoring. The emergence of personal computers in the 1970s and 1980s exacerbated ethical concerns around data privacy, intellectual property, and the digital divide. As computers became commonplace, concerns grew regarding their influence on personal privacy, freedom of speech, and access to information.

**Wiener’s Contribution to Computer Ethics**

Wiener believed that communication between humans and machines was a form of feedback, and that as computers became more sophisticated, ethical problems about their role in society would arise. He foresaw job displacement as a result of automation, robots' potential to surpass human control, and the importance of ensuring that technology benefits humanity rather than exploiting it.

His work paved the way for future discussions regarding ethical AI development, privacy, and human dignity in digital contexts. He stressed that, while machines may significantly boost human production, they also offer risks if used carelessly.

Wiener's attitudes towards automation were both excited and cautious. He believed that technology might relieve humans of monotonous and boring tasks, allowing them to focus on creative and intellectual pursuits. However, he warned against unethical technological use, such as automating work without concern for society consequences or introducing AI systems without human control. Wiener's concerns about dehumanisation, ethical AI design, and societal accountability remain central to computer ethics debates today. His beliefs influenced later ethical frameworks that value transparency, accountability, and fairness in AI and automated decision-making systems.

**Key Figures and Organizations in the Development of Computer Ethics**

After Wiener’s insights there have been a number of computer science scholars and organizations that have contributed to the formalization of computer ethics as a field. These groups and individuals helped play a role in shaping the policy sand guidelines surrounding the use of computing technology today:

* Joseph Weizenbaum (1976) - In Computer Power and Human Reason, he questioned artificial intelligence decision-making, highlighting that machines should not replace human judgement in sensitive sectors like health and justice. Weinbaum’s study underlined the dangers of over-reliance on AI, particularly in situations requiring moral and ethical reasoning. His comments are still important in today's discussions regarding AI bias and automated decision-making (Weizenbaum, 1976).
* Walter Maner (1970s) invented the term "computer ethics" to recognise that computing technology raised unique ethical concerns. Maner's work established the study of computer ethics as a distinct issue, laying the path for future academic progress (maner, 1978).
* Deborah Johnson (1985) published Computer Ethics, thus establishing it as an academic field and addressing topics such as privacy, hacking, and AI accountability. Johnson's work is still widely mentioned in discussions about ethical computing practices and digital rights.
* The American Society of Cybernetics (ASC) (1964) was founded as a scientific organisation dedicated to better understanding and improving cybernetics and ethical computing. The ASC has contributed significantly to studies on feedback systems, AI ethics, and the social impact of technology.
* ACM (Association for Computing Machinery) (1990s–present): Developed the ACM Code of Ethics, which set professional ethical standards for computer scientists and engineers. ACM principles continue to influence ethical challenges in software development, cybersecurity, and artificial intelligence.

**Major Ethical Issues in Computer Ethics**

As computer ethics evolved, many key ethical concerns emerged that are still relevant today:

* Privacy & Data Protection   
    
  Since the introduction of computing technology, privacy has been a major ethical issue. Early conflicts were on government espionage, but today's privacy concerns encompass commercial data collection, social media tracking, and AI-powered surveillance. The implementation of legislation such as the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA) indicates the growing need for guidelines to protect personal information against misuse.
* Cybersecurity and Digital Safety   
    
  Cybersecurity has arisen as a key ethical issue as our dependence on digital technology grows. Cyberattacks, data breaches, and identity theft have prompted requests for increased security and ethical hacking techniques. Organisations and governments must strike a balance between security and privacy, while ensuring that measures do not compromise basic human rights.
* Intellectual property and digital rights.   
    
  The digital era has fundamentally changed the way intellectual property is created, transmitted, and safeguarded. Software piracy, copyright infringement, and the fair use of digital information all raise ethical considerations. Open-source movements push for more publicly available digital resources, but copyright laws are intended to safeguard artists' rights.
* The Effect of Technology on Society.   
    
  Technology has altered human relationships, occupations, and economies. While automation and artificial intelligence (AI) improve efficiency, there are concerns about job loss, economic inequality, and AI bias. Ethical arguments focus on ensuring that technological advancements serve society rather than aggravate current inequities.

**Current State and Future Prospects of Computer Ethic**

Computer ethics is still a fast-expanding topic, with continuing arguments and new issues determining its future. Some of the main concerns in current computer ethics are.

* Ethical AI and Algorithmic Biases  
  The rising use of artificial intelligence in decision-making processes has prompted major concerns about bias and fairness. Many AI models acquire biases from their training data, which leads to biassed results in areas such as hiring, lending, and law enforcement. Researchers and governments are working to establish ethical guidelines for AI research that promote transparency, accountability, and fairness (Belenguer, 2022).
* Data Protection and Surveillance

As more personal data is collected via social media, IoT devices, and cloud computing, concerns around privacy rights have heated up. Governments and companies continue to strike a balance between security concerns and civil freedoms, resulting in continuous debates over digital rights and appropriate data gathering techniques (Małagocka, 2023).

* Cybersecurity Threats and Digital Warfare   
  Cybersecurity threats are becoming more sophisticated, with state-sponsored hacking and widespread ransomware incidents on the rise. Ethical challenges in cybersecurity revolve upon protecting individuals and businesses while avoiding excessive government intrusion. The ethical questions of cyber warfare and digital espionage remain widely contested (Dipert, 2010).
* The Future of Work: Automation.   
  The advancement of artificial intelligence and robotics is transforming the workforce, raising ethical concerns about job displacement and economic inequality. Future computer ethics discussions will most likely focus on establishing regulations to ensure that technological discoveries benefit society as a whole rather than exacerbate existing disparities (Husillos, 2024).

**Conclusion**

Computer ethics, which draws on Norbert Wiener's work on cybernetics, investigates the ethical implications of automation, artificial intelligence, and digital technology. Privacy, cybersecurity, intellectual property, and the societal influence of technology have all developed as key issues throughout time. The growth of AI and automation has continued to influence ideas around ethical computing. Ongoing discussions centre on AI bias, data privacy, spying, and employment displacement. Scholars, legislators, and technologists must work together to ensure ethical progress. As technology evolves, accountability and justice will become more important in crafting a responsible digital future that prioritises human values and social well-being.

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