Digital Ethics

Matthew N. O. Sadiku[1], Mahamadou Tembely[2], Sarhan M. Musa[3]

[1, 2, 3]Roy G. Perry College of Engineering Prairie View A&M University Prairie View, TX 77446

Abstract— Digital ethics deals with how we conduct ourselves when we use digital media. It is a subfield of applied ethics and computer science. It regards access to and use of digital technology as a fundamental human right in the global information society. In a hyperconnected era, digital technology poses new challenges to standard moral problems. This paper briefly introduces digital ethics.

Keywords— Digital ethics, digital etiquette, digital media ethics, information ethics, network ethics, computer ethics, cyberethics.

I. INTRODUCTION

Traditionally, ethics places an emphasis on moral responsibility. Merely following some religious commandments or governmental regulations is not enough to determine whether something is ethical. What is best is not always obvious and we cannot depend on common sense alone. Justice or fairness demands that societies establish some rules that are fair to everyone to handle moral problems [1]. The digital globalization has created a new environment for building new ethics.

Digital technology is at the heart of our economic and social life. The Internet has become a local and international communication infrastructure for economic and political activities. It is not neutral. The information generated by it is used for commercial and security purposes and it infringes on our right to privacy.

Digital ethics deals with the impact of digital technology on our society and the environment. Although we cannot escape technology, should we trust it? If we can trust it, can we trust how people use it? Is it fair for the big digital players (such as the Internet's "big four"—Google, Apple, Facebook, and Amazon) to use their market-dominating influence to exert unfair competition? To what extent should faculty trust digital research process? Is stealing in cyberspace considered the same as stealing in a store? These and similar questions form the agenda for digital ethics.

Digital ethics is receiving more and more attention as the world goes digital. The two terms "digital ethics" and "information ethics" are often used interchangeable. Digital ethics is complex discipline because individual's behavior is hard to monitor or measure. Its goal is to define social responsibility and guide practitioners in making ethical sound judgment. Digital ethnics issues are critical in every area of digital technology—software engineering, digital media/ journalism, medicine/healthcare, social work, social networking, ecommerce, cloud computing, and so on. It covers issues such as freedom of speech, social responsibility, citizenship, copyright, intellectual property rights, etc.

II. CONNECTED TECHNOLOGY

We live in an always-connected, digital age. Technological developments in computer hardware and software shape our experience. Trust is very important as more and more companies move their data to the cloud. Big data itself raises question about trust; rethinking of ethical choices will guide us in handling big data. With the Internet of things, more and more things are connected to the global Internet without addressing security, ethics, and trust issues [2]. Mobile computing enables information access from any location and smartphones are increasingly used to conduct business online.

Ethics should be applied throughout the design process, whether one is designing a hardware or software. "Some issues can be addressed by better design, some by better testing, some by legislation, and some by education of user" [3]. Designers should follow the wisdom of experience: "Do to others what you would have them do to you." This is the equality and mutual respect among individuals or nations [4].

III. CYBERETHICS

There are several ethical issues raised by the rise of technology. The major issues of digital ethics include intellectual property, privacy, security, gender discrimination, digital divide, fair play/representation, computer crime, Internet addiction, software reliability, information overload, and surveillance. The following areas are concerned with digital ethics [5]

- Internet
- Computer science
- Engineering/Technology
- Library and information science
- Mass media/Journalism
- Business

Technologies offer problem-solving applications to solve human problems. They may be used for both benefit and harm. Examples of harm can be [6]:

- Disclosing software development techniques;
- Not testing the software thoroughly;
- Not documenting the design;
- Not supporting the software professional to honor the contract;
- Not honoring contracts and deadlines;
- Not providing training on the developed software where needed; and
- Not applying standard methodologies and standard quality assurance method in the software development process.

The Internet has been used to organize criminal activities such as terrorists recruiting youths, taking images of nude children and women, and credit card fraud. For example, it has enabled piracy in the music industry. Piracy through file sharing, copying, modifying, distributing, and illegal downloads results in circumvention of financial compensation to the musicians (both professionals and amateur) and music

industry. Contravention of intellectual property rights through digital piracy is a crime [7]. The World Wide Web has developed network sharing and information sharing.

IV.   CODES OF ETHICS

Three prominent professional societies, the Institute of Electrical and Electronics Engineer (IEEE), the Association of Computing Machinery (ACM), and National Society of Professional Engineers (NSPE), have developed widely accepted, comprehensive codes of ethics. They provide us with sample ethics from leading organizations. They insist that their members should adhere by the codes as a condition for membership. They only become legally enforceable when they are adopted by governmental licensing boards or regulatory bodies. The only problem with these codes is that they are pre-digital ethics. However, some scholars believe that we do not need a new ethics to accommodate digital technology. Traditional ethics deals with privacy, confidentiality, informed consent, professional boundaries, conflicts of interest documentation, client abandonment, and professionalism [8]. Digital ethics addresses the same issues and much more. The rapid emergence of digital technology has added a new layer of complexity to the issues. For example, encryption provides more protection than traditional paper documents.

V.   CONCLUSION

Digital ethics should not be something only software engineers should be concerned about. It should become a mandatory issue in economics, business, computing, and engineering studies. The need for an ethical education for all digital citizens is vital. Education in digital ethics should be a requirement, not an option [9]. It should be an essential part of public education and university curricula.

More about digital ethics can be found in research journals devoted to it: Journal of Information Ethics, the International Review of Information Ethics, Ethics and Information Technology, and Journal of Information & Ethics in Society.

REFERENCES

[1]   B. Posner, "The ethics of library resources sharing in the digital age," *Interlending & Document Supply*, vol. 40, no. 2, pp. 119-124, 2012.
[2]   L. Evenstad, "The Importance of trust and ethics in a digital world," ComputerWeekly.com, pp. 24-27, July 2016.
[3]   A. Rashid, J. Weckert, and R. Lucas, "Software engineering ethics in a digital world," Computer, June 2009, pp. 34-41.
[4]   Z. Bao and K. Xiang, "Digitalization and global ethics," *Ethics and Information Technology*, vol. 8, pp. 41-47, 2006.
[5]   A. Shiri, "Exploring information ethics," *Journal of Information Ethics*, vol. 25, no. 1, pp. 17-37, Spring 2016.
[6]   M. Al-Aali, "Computer ethics for the computer professional from an Islamic point of view," *Journal of Information, Communication & Ethics in Society*, vol. 6, no. 1, pp. 28-45, 2008.
[7]   S. R. Ponelis and J. J. Britz, "The ethics of piracy in the music industry," *Journal of Information Ethics*, vol. 18, no. 2, pp. 14-26, Fall 2009.
[8]   F. G. Reamer, "Evolving ethical standards in the digital age," *Australian Social Work*, pp. 1-12, 2016.
[9]   D. Larson and K. W. Miller, "Ethics in the IT classroom: Why and how?," *Journal of Information Ethics*, vol. 18, no. 2, pp. 38-49, Fall 2009.

ABOUT THE AUTHORS

Matthew N.O. Sadiku is a professor at Prairie View A&M University, Texas. He is the author of several books and papers. He is a fellow of IEEE.

Mahamadou Tembely is a Ph.D student at Prairie View A&M University, Texas. He received the 2014 Outstanding MS Graduated Student award for the department of electrical and computer engineering. He is the author of several papers.

Sarhan M. Musa is a professor in the Department of Engineering Technology at Prairie View A&M University, Texas. He has been the director of Prairie View Networking Academy, Texas, since 2004. He is an LTD Spring and Boeing Welliver Fellow.