

INFS 214: Introduction to Computing

Session 12 – Computer Ethics

Lecturer: Dr. Ebenezer Ankrah, Dept. of Information Studies
Contact Information: eankrah@ug.edu.gh



UNIVERSITY OF GHANA

College of Education

School of Continuing and Distance Education

2014/2015 – 2016/2017

Session Overview

- Ethics is a set of moral principles that govern the behavior of a group or individual. Therefore, computer ethics is set of moral principles that regulate the use of computers. Some common issues of computer ethics include intellectual property rights (such as copyrighted electronic content), privacy concerns, and how computers affect society.
- As technology advances, computers continue to have a greater impact on society. Therefore, computer ethics promotes the discussion of how much influence computers should have in areas such as artificial intelligence and human communication.

Session Overview

- As the world of computers evolves, computer ethics continues to create ethical standards that address new issues raised by new technologies. This session seeks to explain the concept of computer ethics and historical overview of computer ethics.
- At the end of the session, the student will
 - Be able to identify the elements of computer ethics
 - Understand the basic concept of computer ethics
 - Understand the historical overview of computer ethics
 - Understand the ten commandments of computer ethics

Session Outline

The key topics to be covered in the session are as follows:

- Concept of Computer Ethics
- Historical Overview of Computer Ethics
- Ten Commandments of Computer Ethics

Reading List

- O'Leary, T. J., & O'Leary, L. I. (2014). *Computer Today*. Boston: McGraw Hill. (Chapter 11)
- https://en.wikipedia.org/wiki/Computer_ethics

Topic One

CONCEPT OF COMPUTER ETHICS



Concept of Computer Ethics

- The term ethics is the study of moral standards and how they affect conduct. There is no iota of doubt that for any system to achieve its aim in an organized form, it highly needs to be guided by its dons and dos.
- Ethics is not left out when dealing with computers. Computer Ethics is a part of practical philosophy which concerns with how computing professionals should make decisions regarding professional and social conduct.

Concept of Computer Ethics

- Computer ethics is a new branch of ethics that is growing and changing rapidly as computer technology also grows and develops.
- Computer ethics in the broadest sense can be understood as that branch of applied ethics which studies and analyzes such social and ethical impacts of information technology.

Concept of Computer Ethics

- In recent years, this robust new field has led to new university courses, conferences, workshops, professional organizations, curriculum materials, books, articles, journals, and research centers. And in the age of the world-wide-web, computer ethics is quickly being transformed into "global information ethics".
- Computer Ethics is a part of practical philosophy which concerns with how computing professionals should make decisions regarding professional and social conduct.

Questions

- **Individual Assignment:**
 - List some of the ethical issues in computing

- **Forum Question:**
 - Give the historical overview of computer ethics

Topic Two

HISTORICAL OVERVIEW OF COMPUTER ETHICS



Historical Overview of Computer Ethics

- Below are the milestones in the evolution of the subject on Computer Ethics and Professionalism.
- **1940s and 1950s Era**
- Computer ethics as a field of study has its roots in the work of MIT professor Norbert Wiener during World War II (early 1940s), in which he helped to develop an anti-aircraft cannon capable of shooting down fast warplanes.

Historical Overview of Computer Ethics

- Eras
- **1940s and 1950s** - Norbert Wiener
- **1960s Era** - Donn Parker
- **1970s Era** - Joseph Weizenbaum
- mid-1970s, Walter Manner
- **1980s Era** - James Moor
- **1990s Era** - Bynum and Manner

Historical Overview of Computer Ethics

- The engineering challenge of this project caused Wiener and some colleagues to create a new field of research that Wiener called “cybernetics” -- the science of information feedback systems.
- The concepts of cybernetics, when combined with digital computers under development at that time, led Wiener to draw some remarkably insightful ethical conclusions about the technology that we now call ICT (information and communication technology).

Historical Overview of Computer Ethics

- In 1948, for example, in his book *Cybernetics: or control and communication in the animal and the machine*, he said the following:
- It has long been clear to me that the modern ultra-rapid computing machine was in principle an ideal central nervous system to an apparatus for automatic control; and that its input and output need not be in the form of numbers or diagrams.

Historical Overview of Computer Ethics

- In 1950 Wiener published his monumental book, *The Human Use of Human Beings*.
- Although Wiener did not use the term “computer ethics” (which came into common use more than two decades later), he laid down a comprehensive foundation which remains today a powerful basis for computer ethics research and analysis.

Historical Overview of Computer Ethics

- The book highlighted the following; an account of the purpose of a human life
 - Four principles of justice
 - Powerful method for doing applied ethics
 - Discussions of the fundamental questions of computer ethics
 - Examples of key computer ethics topics.

Historical Overview of Computer Ethics

- **1960s Era**
- In the mid-1960s, Donn Parker of California began to examine unethical and illegal uses of computers by computer professionals.
- Parker once said, “that when people entered the computer center they left their ethics at the door”.

Historical Overview of Computer Ethics

- He published a book on “Rules of Ethics in Information Processing”.
- Over the next two decades, Parker went on to produce books, articles, speeches and workshops that re-launched the field of computer ethics, giving it momentum and importance that continue to grow today.
- Although Parker's work was not informed by a general theoretical framework, it is the next important milestone in the history of computer ethics after Wiener.

Historical Overview of Computer Ethics

- **1970s Era**
- During the late 1960s, Joseph Weizenbaum, a computer scientist at MIT in Boston, created a computer program that he called ELIZA. In his first experiment with ELIZA, he scripted it to provide a crude imitation of “a psychotherapist engaged in an initial interview with a patient”.
- Weizenbaum was shocked at the reactions people had to his simple computer program:

Historical Overview of Computer Ethics

- Weizenbaum was extremely concerned that an "information processing model" of human beings was reinforcing an already growing tendency among scientists, and even the general public, to see humans as mere machines.
- Weizenbaum's book, plus the courses he offered at MIT and the many speeches he gave around the country in the 1970s, inspired many thinkers and projects in computer ethics.

Historical Overview of Computer Ethics

- In the mid-1970s, Walter Manner began to use the term "computer ethics" to refer to- that field of inquiry dealing with ethical problems aggravated, transformed or created by computer technology.
- Manner offered an experimental course on the subject at Old Dominion University. During the late 1970s (and indeed into the mid-1980s), Manner generated much interest in university-level computer ethics courses.

Historical Overview of Computer Ethics

- In 1978 he also self-published and disseminated his Starter Kit in Computer Ethics, which contained curriculum materials and pedagogical advice for university teachers to develop computer ethics courses.
- The Starter Kit included suggested course descriptions for university catalogs, a rationale for offering such a course in the university curriculum, a list of course objectives, some teaching tips and discussions of topics like privacy and confidentiality, computer crime, computer decisions, technological dependence and professional codes of ethics.

Historical Overview of Computer Ethics

- **1980s Era**
- By the 1980s, a number of social and ethical consequences of information technology were becoming public issues in America and Europe.
- Issues like computer-enabled crime, disasters caused by computer failures, invasions of privacy via computer databases, and major law suits regarding software ownership.

Historical Overview of Computer Ethics

- In the mid-80s, James Moor of Dartmouth College published his influential article “What Is Computer Ethics?”
- In addition, Deborah Johnson of Rensselaer Polytechnic Institute published Computer Ethics, the first textbook in the field.
- There were also relevant books published in psychology and sociology: for example, Sherry Turkle of MIT wrote a book on the impact of computing on the human psyche; and Judith Perrolle produced Computers and Social Change: a sociological approach to computing and human values.

Historical Overview of Computer Ethics

- **1990s Era**
- In 1991 Bynum and Manner convened the first international multidisciplinary conference on computer ethics, which was seen by many as a major milestone of the field.
- It brought together, for the first time, philosophers, computer professionals, sociologists, psychologists, lawyers, business leaders, news reporters and government officials. It generated a set of monographs, video programs and curriculum materials.

Historical Overview of Computer Ethics

- During the 1990s, new university courses, research centers, conferences, journals, articles and textbooks appeared, and a wide diversity of additional scholars and topics became involved.
- Developments in Europe and Australia were especially noteworthy including new research centers in England, Poland, Holland, and Italy.

Historical Overview of Computer Ethics

- The ETHICOMP (Computer Ethics) series of conferences led by Simon Rogerson also added weight to the awareness, education and training on computer Ethics, Professionalism and Security.
- These important developments were significantly aided by the pioneering work of Simon Rogerson of De Montfort University (UK), who established the Centre for Computing and Social Responsibility there.

Historical Overview of Computer Ethics

- In Rogerson's view, there was need in the mid-1990s for a "second generation" of computer ethics developments. The mid-1990s has heralded the beginning of a second generation of Computer Ethics.
- The time has come to build upon and elaborate the conceptual foundation whilst, in parallel, developing the frameworks within which practical action can occur, thus reducing the probability of unforeseen effects of information technology application.

Topic Three

TEN COMMANDMENTS OF COMPUTER ETHICS



Ten Commandments of Computer Ethics

- **Ten commandments of computer ethics:**
 - Do not use a computer to harm other people.
 - Do not interfere with other people's computer work.
 - Do not snoop around in other people's computer files.
 - Do not use a computer to steal.
 - Do not use the computer to bear false witness.

Ten Commandments of Computer Ethics

- Do not copy or use proprietary software for which you have not paid.
- Do appropriate other people's intellectual output.
- Do think about the social consequences of the program you are writing or the system you are designing.
- Do always use a computer in ways that insure consideration and respect for your Fellow humans.

References

- O'Leary, T. J., & O'Leary, L. I. (2014). *Computer Today*. Boston: McGraw Hill. (Chapter 11)
- https://en.wikipedia.org/wiki/Computer_ethics
- <http://plato.stanford.edu/entries/ethics-computer/>
- http://www.infosectoday.com/Articles/Intro_Computer_Ethics.htm