CSCI 4000
Ethical and Professional Issues in Computer Science

Chapter 1: What is Computer Ethics?

This course is not primarily a lecture course. It will rely heavily on a discussion of the issues presented in the textbook *Computer Ethics: A Global Perspective* by Giannis Stamatellos. These slides present ideas and quotes from the textbook primarily to inspire and promote discussions in class. A focus will be placed on 1) the local and global impact of computing on organizations and society as well as on 2) how ethical principles and leadership quality impact individuals, organizations and society.
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The object of study of computer ethics:

“...ethical questions and dilemmas that emerge from the widespread use of computers in everyday life...”
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Aim of your textbook:

1. Introduction to computer ethics.

2. Engage students and non-experts in a philosophical enquiry on the social impact of computers.

3. To discuss the ethical issues that emerge from the widespread use of information technology at the local and global level.
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Educational outcomes mandated by ABET for computer science programs.

**Outcome:** An understanding of professional, ethical, legal, security and social issues and responsibilities.

**Outcome:** Students will acquire an ability to analyze the local and global impact of computing on individuals, organizations, and society.
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In this information society:

“... traditional ethical questions are being reexamined and new ones arising as moral standards for human behavior evolve.”

“... stock markets, banks, businesses, and government organizations are totally dependent on information systems, as well as on the reliability and the integrity of digital data ...”
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Technology:

“... the technical means, methods and knowledge used in achieving a practical purpose and providing objects for sustenance and comfort.”
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Heidegger: German philosopher (1889-1976).

“... criticizes modern technology as dangerous due to its inherent complexity ...”

Hans Jonas: German philosopher (1903-1993).

“... since technology expands human power, there must also be an expansion of human responsibility.”

“... because technology changes human condition and life at local and global levels. It engages humanity in a new perspective of ethics.”
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Information Technology (IT):

“... the application of appropriate technologies to the organization, manipulation, and distribution of information by computers and telecommunications.”
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The field of computer ethics

1) started with MIT Professor Norbet Wiener (1948),
2) was advanced 10 years later by the study of the use of computers in unethical activities by Donn Parker,
3) was given the name “computer ethics” by Walter Maner in the 1970s as an area of philosophical inquiry “... dealing with ethical problems aggravated, transformed or created by computer technology.”
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Influential article by James Moor (1985):

Computer ethics is defined as “... the analysis of the nature and social impact of computer technology and the corresponding formulation and justification of policies for the ethical use of such technology.”
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ethics - “... the systematic study of morality”

“... questions of practical reasoning such as freedom, privacy, equality, duty, obligations, and choice as well as the justification of judgments, rights and claims related to these terms.”
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Study of ethics has 2 aims:

1. “… to provide us with the rational basis that will guide our moral actions…”

2. “… to enable us to classify and compare different ethical theories and to defend a particular position on a moral issue.”
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Ethics

1. Normative ethics: “... the study of the norms, rules, values, and standards, that should guide our moral decisions.”

2. Metaethics: “... the study of the nature and the basis of ethics, not with the problems within ethics.”
   a. “... the nature of moral obligation and duty...”
   b. “...ethical reasoning within a larger theoretical context...”
   c. “...the decision-making process ... in moral judgment.”
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Computer ethics:

“... the systematic study of the ethical and social impact of computers in the information society.”

This involves the –

“... acquisition, distribution, storage, processing and dissemination of digital data in information systems and how individuals and groups interact with these systems and data.”
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computer ethics:

The moral issues that relate to “... responsibility and the accountability of the computer users and professionals with regard to the design and implementation of information systems.”
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Types of ethical issues that arise:

1. Complicates traditional ethical problems (e.g., new ways to steal funds, invade privacy, etc.)

2. Traditional issues provide analogs (e.g., ownership of physical items and ownership of intellectual property)

3. The arising of new ethical problems (e.g., computer viruses)
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Sources for moral decision making:

1. The law. (codified moral principles).
2. Codes of practice (guidelines for employers)
3. Professional ethics (e.g., ACM code of ethics)
4. Personal ethics (e.g. religious guidelines)
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Ethical theories/ideas that provide a framework for moral decisions.

Every moral action involves two factors:

1. “... the person (i.e., the moral agent ...) who acts and the policies, rules and laws that are relevant in particular ethical decisions ...”

2. “... those (including the moral agent) that are affected by the action.”
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With respect to the moral agent an ethical action includes three factors:

Intentions    Actions    Consequences

There are three groups of ethical theories we will consider, where each one emphasizes a different one of the three factors given above.
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Virtue ethics (Aristotle)

• Emphasizes the intentions and the moral character of the moral agent.
• “... choice that is grounded on moderation ...”
• “... deals with the character and behavior of the individual within the community ...”
• “... the final end of all actions has to be happiness.”
• “A voluntary action has to be internal (coming from the agent) rather than external (compelled by someone or something other than the agent).”
• Freedom of the moral agent is a necessity.
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Deontological ethics

• Emphasizes the action of the moral agent.
• Every action is right or wrong in itself and not because of the good or bad consequence it has on others.
• Freedom of the moral agent is a necessity.
• “... an action is good only if it is done from a sense of duty ... based on good intentions ...”
• The moral agent must rely on the “... objective moral principles of a universal moral law ... not on subjective moral principles or personal preferences ...”
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Utilitarianism

• Emphasizes the consequences of moral actions, not the intentions or acts of the moral agent.

• The Principle of Utility: "... always act in the way that will produce the greatest overall amount of good in the world."

• The aim is "... to maximize good and minimize suffering for the greatest number of people."
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We can use these different approaches to ethics as a practical framework in our discussions of ethical issues we encounter in this course.

In a given situation, different approaches might provide different types of insights into the moral dimension of the issues we investigate.
Chapter 1: Study Guide

• What is computer ethics?
• What is meant by the sentence, “… traditional ethical questions are being reexamined and new ones arising as moral standards for human behavior evolve”?
• Define information technology.
• Name four sources that can help in moral decision making.
• We discussed how, with respect to a moral agent, an ethical action includes three important factors. We also discussed three groups of ethical theories, (virtue ethics, deontological ethics, utilitarianism) where each group emphasizes a different one of these three factors. Be ready to discuss these three theories and to use them in reasoning about a given ethical situation.