Computer Ethics

A Necessarily Brief Introduction

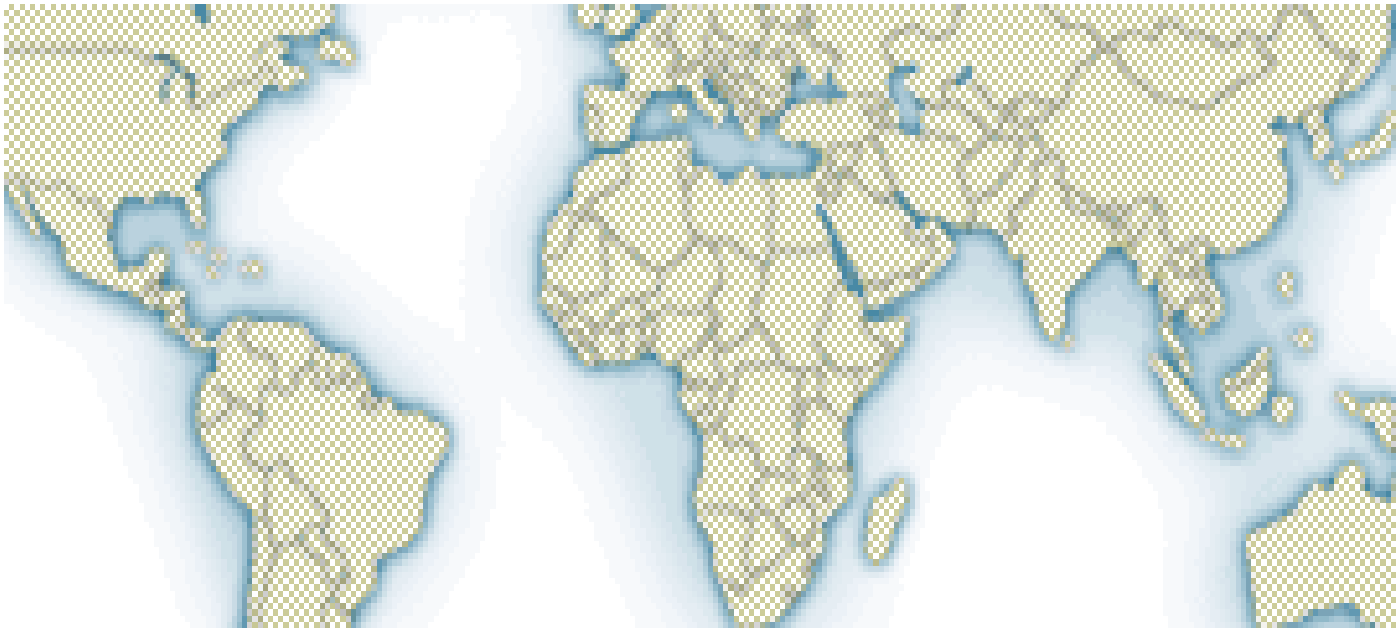
Ethics

- Each society establishes rules and limits on accaptable behaviour
- These rules form a *moral code*
- Sometimes the rules conflict
- In general they are beliefs or conventions on good and evil, good or bad conduct, justice and injustice
- The rules sometimes do not cover new situations

Examples:

- Employee monitoring.
- Downloading music using Napster software at no charge.
- Robert Hansen, FBI agent, convicted for providing information to Russia.
- DoubleClick sued for planning to reveal Web users identities.
- Plagiarism.
- Hackers defaced Web sites.

The world is changing



Introduction

In the industrialized world computers are changing everything: from education to health, from voting to making friends or making war.

Developing countries can also fully participate in cyberspace and make use of opportunities offered by global networks.

We are living a technological and informational revolution.

It is therefore important for policy makers, leaders, teachers, computer professionals and all social thinkers to get involved in the social and ethical impacts of this communication technology.

Cyberethics and cybertechnology Definitions.

- **Cyberethics** is the field of applied ethics that examines moral, legal, and social issues in the development and use of cybertechnology.
- **Cybertechnology** refers to a broad range of technologies from stand-alone computers to the cluster of networked computing, information and communication technologies.
- Internet ethics and information ethics.

Computer ethics: definition

- Same as cyberethics, or
- The study of ethical issues that are associated primarily with computing machines and the computing profession.
- The field of applied professional ethics dealing with ethical problems aggravated, transformed, or created by computer technology (1970, Maner)

Computer Ethics:

Some historical milestones

- 1940-1950: Founded by MIT prof Norbert Wiener: cybernetics-science of information feedback systems.
- 1960s: Donn Parker from California examined unethical and illegal uses of computers by professionals. 1st code of professional conduct for the ACM.
- 1970: Joseph Weizenbaum, prof at MIT, created Eliza.
- Mid 1970: Walter Maner taught 1st course and starter kit in computer ethics.

Computer ethics history (cont.)

- 1980: Issues like computer-enabled crime, disasters, invasion of privacy via databases, law suits about software ownership became public.
- Mid 80s: James Moore of Darmouth, Deborah Johnson of Rensselaer, Sherry Turkle of MIT, and Judith Perrole published article and books.

Computer ethics history (cont. 2)

- 1990: Interest in computer ethics as a field of research had spread to Europe and Australia.
- Simon Rogerson of De Montfort University (UK) Terrell Bynum, editor of Metaphilosophy (USA), initiated international conferences.
- Mid 90s: Beginning of a 2nd generation of computer ethics with more practical action.
- 2004: Interest spreads to Cotonou, Benin

Any unique moral issues? Deborah Johnson: Ethics on-line.

- The ***scope*** of the Internet is **global** and **interactive**.
- The Internet enables users to interact with **anonymity**.
- Internet technology makes the **reproducibility** of information possible in ways not possible before.
- The above features make behavior on-line morally different than off-line.

The debate continues:

- James Moore: Computer technology is “logically malleable” unlike previous technologies. It can create “new possibilities for human action”.
- Brey: disclosing non-obvious features embedded in computer systems that can have moral implications.
- Alison Adams: Take into account gender-related biases. Combine feminist ethics with empirical studies.

Sample topics in computer ethics

- Computers in the workplace: a threat to jobs? De-skilling? Health and safety?
- Computer security: Viruses. Spying by hackers.
- Logical security: Privacy, integrity, unimpaired service, consistency, controlling access to resources.
- Software ownership: Intellectual property vs. open source.
- Software development: quality, safety

Computers in the workplace

- Monitoring of employees: employer vs. employee point of view.
- Loyalty- Whistle blowing.
- Health issues.
- Use of contingent workers.
- A threat to jobs.
- De-skilling.

Computer security

- Viruses: programming code disguised
- Worms: propagate w/o human intervention
- Trojan horses: gets secretly installed.
- Logic bombs: execute conditionally.
- Bacteria or rabbits: multiply rapidly.
- Computer crimes: embezzlement.
- Hackers: vandalism or exploration.
- Denial of service attack: flood a target site.

Logical security

- Privacy invasion of email, files, and own computer (cookies).
- Shared databases.
- Identity theft.
- Combating terrorism: USA Patriot act.

Software ownership

- Knowledge: private greed, public good.
- Profit vs. affordability
- Freedom of expression and access to information
- Right to communicate: share and learn in a globalized world.
- Digital divide is immoral.
- Open source software: Linux. Open access.
- North-South information flow. Indigenous knowledge.

Professional responsibility

- Codes of ethics.
- Professional organizations: ACM. IEEE, CPSR
- Licensing
- Industry certifications
- Common ethical issues: Piracy, inappropriate sharing of information, inappropriate usage of computing resources.

Codes of ethics

- Avoid harm to others
- Be honest and trustworthy
- Acquire and maintain professional competence
- Know and respect existing laws pertaining to professional work
- Avoid real or perceived conflicts of interest
- Be honest and realistic in stating claims or estimates based on available data

Global Information Ethics

- Freedom of speech in the USA
- Control of pornography
- Protection of intellectual property
- Invasion of privacy
- Global cyberbusiness
- Global education: free press
- Information rich and poor

The future

- **Gorniak hypothesis**: Computer Ethics, a branch now of applied ethics, will evolve into a system of global ethics applicable in every culture on earth. The computer revolution will lead to a new ethical system, global and cross-cultural. It will supplant parochial theories like Bentham and Kant based on isolated cultures.
- **The Johnson hypothesis**: Opposite.

Web sites

- http://www.ijie.org, International Journal of Information Ethics.
- www.sans.org/topten.htm Top ten Internet security flaws that system administrators must eliminate to avoid becoming an easy target.
- http://ethics.csc.ncsu.edu/ Computer ethics as a map.
- http://www.neiu.edu/~ncaftori/ethics-course. The ethics course I borrowed these overheads from.