Computer Ethics and Cyber Law

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COT 4810 Topics in Computer Science
Computer and Information Ethics

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Outline

- Remember that thing called ethics?
- Origins of computer ethics (CE)
- What is computer ethics?
- Examples of computer ethics
- Cyber Ethics
- Cyber Law and digital information
Remeber that thing called ethics?

- Good vs Bad
- Moral duty and obligation
- Applied ethics
  - Ethical theory → Real-life situations
  - Computer ethics
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Origins of computer ethics 1.0

- Founded by Norbert Wiener in mid-1940s
- Professor of mathematics and engineering at MIT
- Originally called “Cybernetics”
- Walter Maner coined “Computer Ethics” in 1976
 Origins of computer ethics 2.0

- Wiener wrote 3 relevant books
  - Cybernetics (1948)
  - The Human Use of Human Beings (1950)
  - God and Golem, Inc. (1963)
- Introduced concerns about
  - Computers and security
  - Virtual communities (Social Networking)
  - Robot ethics
  - Artificial Intelligence
Wiener was ahead of his time

Wiener's view on information

- Assumed metaphysical universe
- World and entities combinations of matter-energy and information
- Thinking is information processing
- Living organisms are patterns of information

“We are but whirlpools in a river of ever-flowing water. We are not stuff that abides, but patterns that perpetuate themselves.”
Origins of computer ethics 4.0

- Late 1940s
- Wiener thought computing would remake society
  - “The Second Industrial Revolution”
  - “The Automatic Age”
- He was right!
Remember that thing called ethics?
Origins of computer ethics (CE)
What is computer ethics?
Examples of computer ethics
Cyber Ethics
Cyber Law and digital information
What is computer ethics? 1.0

- **Computer Ethics**
  - Deals with how computing professionals should make decisions regarding professional and social conduct

- **Information Ethics**
  - Investigates the ethical issues arising from the development and application of information technologies
  - Privacy and intellectual property rights
What is computer ethics? 2.0

- Important people in CE
  - Norbert Wiener
    - Founding father of CE
  - Walter Maner and Deborah Johnson
    - The “uniqueness” debate
  - James Moor
    - *What is Computer Ethics?* (1985)
  - Luciano Floridi
    - Philosophy of information
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Examples of computer ethics

- Professional responsibility
  - Software Engineering Code of Ethics and Professional Practice (Version 5.2)
- ACM/IEEE-CS Joint Task Force on Software Engineering Ethics and Professional Practices
- Software engineers shall commit to making software a beneficial and respected profession
  - Analysis and specification
  - Design and development
  - Testing and maintenance
Software Engineering Code

1) Public
2) Client and Employer
3) Product
4) Judgement
5) Management
6) Profession
7) Colleagues
8) Self

Source: http://www.acm.org/about/se-code
Examples of CE outside of CS

- Government, military, law enforcement
- Law Enforcement in Florida
  - Driver And Vehicle Information Database (DAVID)
  - Officers required to sign an IT code of conduct
- Retail
  - Monitoring of network activity
  - Social networking policies
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Cyber Ethics

- Computer ethics and the internet
- U.S. Department of Justice
  - “code of safe and responsible behavior for the Internet community”
- Issues
  - Globalization
  - Privacy
  - Intellectual Property
CE: Globalization 1.0

- Integration of economies, societies, and cultures
  - Done via communication, transportation, and trade
- “Global Information Ethics”
  - Efforts to develop mutually agreed standards of conduct
  - Advance and defend human values
- “In Cyberspace, the First Amendment is a local ordinance” - John Perry Barlow (EFF)
Who administrates the Internet?

- Internet Society (ISOC)
- Internet Engineering Task Force (IETF)
- Internet Corporation for Assigned Names and Numbers (ICANN)
- Internet Architecture Board (IAB)
- Council of Registrars (CORE)
- InterNIC

Sort of a pseudo-Executive branch of Internet

Some believe world needs Legislative branch
International Telecommunication Union (ITU)
- Agency of United Nations that regulates ICT issues
- May some day create global standards for policing the Internet
- People will either rejoice or be outraged
- For example
  - Will US citizens still be protected under the Constitution?
CE: Privacy

- Mid-1960s
  - Control over personal information
- Later, scholars like James Moor
  - Restricted access, not control
- U.S. databases in mid-1960s
  - Census data, tax records, etc.
- How many accounts do you have online?
  - Privacy policies removes liability over personal information
- Hope that P ≠ NP!
As a professional, who owns the software you write?

- If employee, then your employer
- If contracted, then you unless contract states otherwise

Richard Stallman

Free Software Foundation
CE: Intellectual Property 2.0

- Why invest time and money then?
  - Likely to remain an endless debate
- Digital Rights Management (DRM)
  - Access control technology
  - Film, television and music
  - Computer games
  - E-books
  - Enterprise documents
- Content Scramble System (CSS)
  - Famous example of DRM
CSS implemented in DVDs circa 1996
- Uses 40-bit stream cipher
- Prevented illegal copying
- Stopped users from playing on noncompliant devices (Linux OS)

Jon Johansen released DeCSS
- Reverse engineered the algorithm in 1999
- Fifteen year old from Norway
- Had help from two anonymous people
Johansen's home was raided soon after release of DeCSS

Trial held in Norway
- Acquitted, retried, and acquitted again

DVD Copy Control Association
- Filed charges against Johansen
- Dropped January 2004

DeCSS source code easily obtainable online
- Simple C program, less than 200 lines of code
- DeCSS Source Code
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Cyber Law and Digital Information

- Legislation regarding computing and the Internet in the U.S.
- Legislation regarding digital information in the U.S.
- Disclaimer: IANAL (I Am Not A Lawyer)
- Net Neutrality
- Privacy Law
- Intellectual Property Law
Net Neutrality 1.0

- All content on the Internet must be treated equally
- Should prevent ISPs and governments from putting restrictions on
  - Content
  - Sites
  - Platforms
  - Equipment that may be attached
  - Modes of communication
- Many failed attempts to pass legislation in U.S.
Net Neutrality 2.0

- Federal Communications Commission (FCC)
  - Uses jurisdiction granted by Supreme Court under Communications Act of 1934
  - Has established rules regarding net neutrality
- Verizon has filed suit against FCC's new rules approved December 21, 2010
- Link to 194 page report and order:
  - FCC Net Neutrality Rules
Net Neutrality 3.0

What are the rules?

1) Broadband providers for both wired and wireless Internet must disclose their network management policies.

2) Wired broadband providers may not block any lawful content, applications or services. Wireless broadband providers are not required to allow all applications and services, but may not block any lawful Websites applications that compete with its telephone or video service. This is all subject to "reasonable network management."

3) Wired broadband providers may not speed up or slow down individual types of lawful traffic, with exceptions for reasonable network management. No such rules apply to wireless broadband.
Freedom of Information Act of 1966

- Any Individual has the right to make a request for federal agency records or information
- All agencies of the U.S. Government are required to disclose records upon receiving a written request for them.
- There are nine exemptions in the addition to limits to FOIA that protect certain records from disclosure.
Privacy Law 2.0

- Privacy Act of 1974
  - Protects personally identifiable information maintained by federal agencies
- What about information not stored by government?
- State laws allow legislation
  - Florida has none
- How to protect yourself?
  - Practice safe cyber ethics!
Digital Millennium Copyright Act

- Enacted October 28, 1998
  - Amended Copyright Act of 1976
  - Two important titles: Title I and Title II

- Title I
  - WIPO Copyright and Performances and Phonograms Treaties Implementation Act
  - World Intellectual Property Organization of UN

- Title II
  - Online Copyright Infringement Liability Limitation Act (OCILLA)
DMCA Title I

- WIPO Copyright and Performances and Phonograms Treaties Implementation Act
- Restricts the ability to make, sell, or distribute devices which circumvent DRM systems
- Specifically **illegal** to
  - Circumvent a technological measure that effectively controls access to a work
- Exemptions on a case by case basis
  - Research
  - Reverse engineering
DMCA Title II

- Online Copyright Infringement Liability Limitation Act (OCILLA)
- Creates “safe harbor” for OSPs against copyright liability
  - Must adhere to prescribed guidelines
  - Promptly block or remove content if they receive notification of infringement
1) Alice puts a copy of Bob's song on her AOL-hosted website.

2) Bob, searching the Internet, finds Alice's copy.

3) Charlie, Bob's lawyer, sends a letter to AOL's designated agent (registered with the Copyright Office) including:
   - contact information
   - the name of the song that was copied
   - the address of the copied song
   - a statement that he has a good faith belief that use of the material in the manner complained of is not authorized by the copyright owner, its agent, or the law.
   - a statement that the information in the notification is accurate
   - a statement that, under penalty of perjury, Charlie is authorized to act for the copyright holder
   - his signature

4) AOL takes the song down.

5) AOL tells Alice that they have taken the song down.
DMCA Title II Counter-notification process

1) Alice now has the option of sending a counter-notice to AOL, if she feels the song was taken down unfairly. The notice includes:

   1) contact information
   2) identification of the removed song
   3) a statement under penalty of perjury that Alice has a good faith belief the material was mistakenly taken down
   4) a statement consenting to the jurisdiction of Alice's local US Federal District Court, or, if outside the US, to a US Federal District Court in any jurisdiction in which AOL is found.
   5) her signature

2) If Alice does file a valid counter-notice, AOL notifies Bob, then waits 10-14 business days for a lawsuit to be filed by Bob.

3) If Bob does not file a lawsuit, then AOL must put the material back up.
Conclusion

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