

# Computer Security

Ethics

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# Definition of Ethics

1. the discipline dealing with what is good and bad and with moral duty and obligation

2. ...

A. a set of moral principles : a theory or system of moral values <the present-day materialistic ethic> <an old-fashioned work ethic>

B. the principles of conduct governing an individual or a group <professional ethics>

C. a guiding philosophy

D. a consciousness of moral importance <forge a conservation ethic>

3. a set of moral issues or aspects (as rightness) <debated the ethics of human cloning>

# What is Ethics

a system of moral principles relating to benefits and harms of particular actions to rightness and wrongness of motives and ends of them

- May deviate from laws
  - Slavery was legal but not ethical
- Is not the same as religion
  - Even though religions many times have a set of ethical codes
- Is not social norms
  - Some accepted behavior in a society may not be ethical
- Does not mean following your feelings
  - Sometimes is is "difficult" to do what you know is right

# Ethical Theories I

- The golden rule
  - Do unto others as you would have them do unto you
- Hippocratic Oath
  - Physician swears to uphold a set of values in his profession

# Ethical Theories II

- Consequence-based theory:
  - The **teleological** theory of ethics focuses on the **consequences** of actions.
  - Choose the action (among some set) that will result in the **greatest good** and the **least harm**.
  - There are two forms of teleology
    - Egoism – relates to the person taking the action
    - Utilitarianism – relates to everybody, the whole “universe”

# Ethical Theories III

- Rule-based theory
  - The **deontology** theory is founded in a **sense of duty**
  - Certain things are **inherently good**, i.e. good (or bad) in themselves, e.g. truth, justice, freedom, peace, etc
  - There is a special form of deontology, **rule-deontology** that believes that there are a set of **universal, self-evident rules** that should specify our proper conduct

# Medical Example

- I think I have found a cure for HIV!!! (or malaria)
  - HIV: 2 million died 2010 (maybe even 3 million, 500 000 children)
  - Malaria: 60 000 deaths mostly among African children.
- but I need to test medicine on ...
  - Plants: ok? Plant might die!
  - I need animal testing: 1 mouse necessary
    - Mouse might die
    - It might be a very painful death!
    - What if I need 1,000 mice
    - 1,000 dogs
    - 1,000 chimpanzees
  - It turns out I need a human trial
    - Terminally ill patients, about ten for my test
    - What if I need ten healthy people?
    - Large study: 10,000 people, including men, women, and children
  - Cure not certain – only 1% chance I will find something useful

# Real-world examples

- Swine flu vaccine side effects: narcolepsi
- Embryonic database used for other purposes (see next slide)
- Research Ethics Boards (REB): Used to formalize the ethics review process.
  - Many countries have an REB that a proposal need to pass before research can be publicly funded.

The screenshot shows the top navigation bar of The New York Times website with links for HOME PAGE, TODAY'S PAPER, VIDEO, MOST POPULAR, and U.S. Edition. Below this is the masthead 'The New York Times' and 'The Opinion Pages'. A secondary navigation bar includes WORLD, U.S., N.Y./REGION, BUSINESS, TECHNOLOGY, SCIENCE, HEALTH, SPORTS, and OPINION. The article is categorized as EDITORIAL and titled 'Stem Cell Research Gets a Reprieve', published on January 20, 2013. The main text discusses the Supreme Court's decision to end a lawsuit against federal funding of embryonic stem cell research. A sidebar on the right contains social media sharing options (Facebook, Twitter, Google+, Save, E-mail, Share, Print, Reprints) and a movie poster for 'TRANCE A DANNY BOYLE FILM'. A 'Connect With Us on Twitter' box provides information about following the editorial page editor, Andrew Rosenthal, and the opinion page editor, Andrew Rosenthal, on Twitter. A red 'Opinion' logo is also visible.

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EDITORIAL  
Stem Cell Research Gets a Reprieve  
Published: January 20, 2013

The Supreme Court has wisely ended a bizarre and destructive lawsuit to prevent the federal government from financing embryonic stem cell research. By [refusing to hear the case](#), the court put a halt to more than three years of turmoil that drove some scientists away from such research because of uncertainty about its legality and questions about continued federal funding.

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Opinion

Scientists study stem cells to analyze cell development and to explore ways that stem cells might repair or replace damaged tissues associated with such devastating ailments as spinal cord injuries, diabetes and Parkinson's. Most of the stem cells used in such research have been derived from days-old human embryos through a process that destroys the embryos and is strongly opposed by many religious and social conservatives.

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# Swedish Biobank

- PKU-biobank: stores blood from almost all people born in Sweden after 1972 (3,8 million)
- Used to make sure children do not have any of 24 serious diseases where medication needs to be immediate.
- Used for some other research.
- Foreign minister in Sweden is killed. The police used data from the biobank instead of going directly to the suspicious person.
- Police has not been allowed use of PKU after this.
- But – there are other murders that could maybe be solved if police could use the information in the PKU.

STORA JOURNALISTPRISET 2012 Onsdag den 27 februari ☀ Stockholm 1° | Klart.se

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NYHETER NÄRINGSLIV KULTUR OPINION SPORT RESOR MAT&VIN  
STOCKHOLM SVERIGE VÄRLDEN HYRESKOLLEN WEBB-TV IDAGSIDAN VADE

### Mordutredare vill ha dna-register

På morgonen för åtta år sedan mördades åttaårige Mohammad Ammouri och 56-åriga Anna-Lena Svensson i Linköping. Om utredarna får tillgång till PKU-banken – med blodprover från 3,8 miljoner svenskar – skulle dubbelmorden sannolikt klaras upp, bedömer utredningsledaren Jan Staaf. Men inom kort stänger regeringen registret helt för polisen.

LÄS ÄVEN: [FBI bidrog i jakten på dubbelmördare](#)



19 oktober 2012 kl 07:14 , uppdaterad: 19 oktober 2012 kl 08:37

**Det är tidigt på morgonen** den 19 oktober 2004 och åttaårige Mohammad Ammouri är på väg till skolan. Det är ännu inte helt ljukt ute, vädret är mulet och ett lätt duggregn faller när pojken kommer gående längs Åsgatan i Linköping.

Klockan 07.50 korsas hans väg av en man i 20-årsåldern. Utan förvarning attackerar han åttaåringen och hugger honom flera gånger med en kniv. 56-åriga Anna-Lena Svensson ser attacken, försöker stoppa överfallet men blir även hon brutalt nedhuggen. Båda dör.

Rekommendera 48

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**PKU-biobanken** upprättas genom att de första blodproven från nyfödda börjar arkiveras. Ett av de första fallen där polisens användning av PKU-registret uppmärksammas är i samband med mordet på baren Brother Tuck på Södermalm i Stockholm. Sveriges utrikesminister Anna Lindh mördas. Polisen fattar misstankar om att Mijailo Mijailovic är gärningsmannen, men laget är känsligt. Enligt Leif GW Persson ville man därför undvika att gripa och topsa honom. Därför valde polisen att

# Swedish Biobank



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## Researchers are guardians of trust in biobank research

[Published 2013-02-18]

**Do we trust biobank researchers? In a doctoral thesis from Uppsala University, medical doctor and bioethicist Linus Johnsson claims that we do: At least in Sweden. And since we do, researchers in turn have a moral responsibility towards us.**

<http://www.uu.se/en/news/news-document/?id=2336&typ=artikel&area=2&lang=en>

police could use the information in the PKU.

**Det är tidigt på morgonen** den 19 oktober 2004 och åttaåringe Mohammad Ammouri är på väg till skolan. Det är ännu inte helt ljus ute, vädret är mulet och ett lätt duggregn faller när pojken kommer gående längs Åsgatan i Linköping.

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Söderhamn i Stockholm.  
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[http://www.svd.se/nyheter/inrikes/mordutredare-vill-ha-dna-register\\_7594684.svd](http://www.svd.se/nyheter/inrikes/mordutredare-vill-ha-dna-register_7594684.svd)

# Ethical Issues Related to Computers and Info Systems

- Computer use lead to new areas to be considered for ethical issues:
  - repositories of information – unauthorized use
  - producers of new forms and types of assets
    - new concept of ownership
  - computers as instruments of acts
    - responsibility of output?
  - symbols of intimidation and deception
    - computers may be regarded as “human”
- The issue is to **balance professional responsibilities** with **ethical or moral responsibilities**

# Special concerns

- Properties of ICT environment
  - Scale, speed, tight coupling, decentralization, wide distribution, opacity
- Examples of ICT domain where ethics would be important
  - Digital crime
  - Information assurance for critical infrastructure
  - Big data: use, sharing
  - Avatars in online world
  - Malware controlling compromised machines
  - Embedded medical devices controlling biological functions
  - Process controllers for critical infrastructure

# More examples

- See offprint
- Read direct download: "Applying Ethical Principles to Information and Communication Technology Research"
  - Section D contains a case study
  - Section F.4 contains a list of papers that has been published.

# Ethical Question Examples

- **whistle-blower**
  - when professional ethical duty conflicts with loyalty to employer
  - e.g. inadequately tested software product
  - organizations and professional societies should provide alternative mechanisms
- potential **conflict of interest**
  - e.g. consultant has financial interest in vendor which should be revealed to client (Cp Chinese Wall model)

# Codes of Conduct

- ethics not precise laws or sets of facts
- many areas may present ethical ambiguity
- many professional societies have ethical codes of conduct which can:
  1. be a positive stimulus and instill confidence
  2. be educational
  3. provide a measure of support
  4. be a means of deterrence and discipline
  5. enhance the profession's public image

# Codes of Conduct

- Codes of conduct often have some common themes:
  1. dignity and worth of other people
  2. personal integrity and honesty
  3. responsibility for work
  4. confidentiality of information
  5. public safety, health, and welfare
  6. participation in professional societies to improve standards of the profession
  7. the notion that public knowledge and access to technology is equivalent to social power

# Final word

Quotation:

- **Our civilization is in serious trouble. In desperate effort to handle the increasing immorality we are instituting an increasing number of laws.**  
(Rolf Nordahl)