Why Computer Ethics?

- New issues accompany new technologies
- New actions, new consequences
- Old actions, new consequences
- “Common wisdom” not always adequate
Ethics

- Ethics: systematic, rational analysis of issues regarding performance of actions having both positive and negative impacts
- “Doing ethics”: answers with explanations
- Explanations: facts, values, logic
Ethical Theories

• Methods for considering the morality of actions
• Methods for evaluating whether actions should or should not be done
• Methods for guiding the design of ethical actions
• Sources of values and logics for explanation
Ethical Theories

• Workable ethical theory
• values and logic that can produce explanations that could be persuasive to a skeptical, yet open-minded audience
Ethical Theories

- Subjective relativism
- Cultural relativism
- Divine command theory

While these do provide values and logic, we will consider these not to be workable.
Ethical Theories

- Kantianism
- Act utilitarianism
- Rule utilitarianism
- Social contract theory

These we will consider workable.
Subjective Relativism

• Relativism
  • No universal norms of right and wrong
  • One person can say “X is right,” another can say “X is wrong,” and both can be right

• Subjective relativism
  • Each decides right and wrong for himself or herself
  • “What’s right for you may not be right for me”
Case for Subjective Relativism

- Well-meaning and intelligent people can disagree on moral issues
- Ethical debates are disagreeable and pointless as no one is convinced of other viewpoint
Case Against Subjective Relativism

- Blurs distinction between doing what you think is right and doing what you want to do
- Subjective Relativism and tolerance are not the same
- Decisions often not based on reason

Not a workable ethical theory
Cultural Relativism

- What is “right” and “wrong” depends upon a given culture’s moral guidelines or current practices.
- These guidelines vary from place to place and from time to time.
- A particular action may be right in one society at one time and wrong in other society or at another time.
Case for Cultural Relativism

- Different social contexts demand different moral guidelines
- Behavioral data indicate significant cultural differences
- It is arrogant for one society to judge another
- Morality is reflected in actual behavior within a culture
Case Against Cultural Relativism

- Because two societies do have different moral views doesn’t mean they should have different views.
- Doesn’t explain how moral guidelines are determined or evolve.
- Provides no way for cultures in conflict to resolve issues.
- Because many practices are acceptable, does not mean any cultural practice is acceptable (many/any fallacy).
- Societies do, in fact, share certain core values.
Divine Command Theory

- Good actions: those aligned with God’s will
- Bad actions: those contrary to God’s will
- Holy books reveal God’s will
- Use holy books as moral decision-making guides
Case for Divine Command Theory

- We owe obedience to our Creator
- God is all-good and all-knowing
- God is the ultimate authority
- Most religious rules are ethical
Case Against Divine Command Theory

- Holy books can disagree
- Interpretation of holy books can differ
- Society is multicultural, secular
- Not all moral problems addressed in scripture
- “good” ≠ “God” (equivalence fallacy)
  - which came first
- Based on obedience, not reason
Kantianism

• Immanuel Kant

• Only thing in the world that is good without qualification is good will  ~~ “dutifulness”

• what one ought to do is more important than what one wants to do

• Reason should cultivate desire to do right thing.
Categorical Imperative
(1st Formulation)

Act only from moral rules that you can will to be universal moral laws.
Illustration of 1st Formulation

- Question: Can a person in dire straits make a promise with the intention of breaking it later?
- The person in trouble wants his promise to be believed so he can get what he needs.
- Universalize rule: Everyone may make and break promises if they need to do so.
- This rule would make promises unbelievable, contradicting the desire to have promise believed.
- Extenuating circumstances generally are not important.
Categorical Imperative
(2\textsuperscript{nd} Formulation)

Act so that you treat both yourself and other people as ends in themselves and never only as a means to an end.

This is often an easier formulation to work with than the first formulation of the Categorical Imperative.
Plagiarism Scenario

- Carla
  - Is a single mother, working full time
  - Takes two evening courses/semester
- Carla’s History class
  - Requires more work than normal
  - Carla earning an “A” on all work so far
  - She doesn’t have time to write final report
- Carla purchases report online, submits it as her own
Kantian Analysis 1st Version

- Carla wants credit for plagiarized report
- General Rule: “You may claim credit for work performed by others (when you don’t have time to do the work yourself).”
- Written reports would no longer be credible indicators of a student’s knowledge
- Proposed moral rule is self-defeating
- It is wrong for Carla to turn in a purchased report
Carla submitted another person’s work
She attempted to deceive her professor
She treated professor as a means to an end
Therefore, what Carla did was wrong
Circumstances are irrelevant, intent determines judgement
Case Against Kantianism

- Sometimes no one rule adequately characterizes an action or situation.
- There is no way to resolve a conflict between rules.
- Kantianism allows no exceptions to moral rules.
Case for Kantianism

- Rational
- Based on universal moral guidelines.
  duty to do good
- Treats all persons as moral equals
Utilitarianism

- Jeremy Bentham and John Stuart Mill
- An action is good if it benefits someone
- An action is bad if it harms someone
- Outcomes important ... not good will or intention
Utilitarianism

- **Utility**: tendency of an object to produce happiness or prevent unhappiness for an individual or community

- **Happiness** = advantage = benefit = good = pleasure

- **Unhappiness** = disadvantage = cost = harm = pain
Act Utilitarianism

An action is right (or wrong) to the extent that it increases (or decreases) the total happiness of the affected parties.

affected parties -- stakeholders
Act Utilitarianism

- Utilitarianism
  - Morality of an action has nothing to do with intent
  - Focuses on the consequences, not intentions
- Act utilitarianism
  - Add up change in happiness of all affected beings
  - Sum > 0, action is good; Sum < 0, action is bad
Act Utilitarianism

- Methodology
  - identify stakeholders
  - identify impacts of act on stakeholders
  - evaluate overall impact by combining
Highway Routing Scenario

- State may replace a dangerous stretch of highway
- New highway segment less curves, 1 mile shorter
- 150 houses would have to be removed
- Some wildlife habitat would be destroyed
Highway Routing Scenario

- stakeholders
  - home owners along proposed route
  - drivers that use the route
  - state tax payers
  - wildlife, environment
Evaluation

• Costs
  • $20 million to compensate homeowners
  • $10 million to construct new highway
  • Lost wildlife habitat worth $1 million

• Benefits
  • $39 million savings in automobile driving costs
  • saved lives and hospital costs

• Conclusion  ???
Case Against Act Utilitarianism

• Unclear whom to include as stakeholders
• Unclear the valuation of certain impacts
• Too much work for all decisions
• Ignores our innate sense of duty
• Susceptible to the problem of moral luck
Bentham
Weighing Benefits/Costs

• Intensity, Duration, Certainty
• Propinquity, Fecundity, Purity, Extent

To enact climate change regulations
Case for Act Utilitarianism

- Focuses on happiness
- Down-to-earth (practical)
- Comprehensive
- Workable ethical theory
BLM WOPR

- Proposed Action
  - increase logging, including of ancient forests
  - increase roads in forests
  - reduce watershed and threatened species habitat protections
Rule Utilitarianism

• Adopt general, moral rules which, if followed by everyone, will lead to the greatest increase in total happiness

• Act utilitarianism applies utility analysis to individual actions

• Rule utilitarianism applies utility analysis to general situations
Anti-Worm Scenario

- August 2003: Blaster worm infected thousands of Windows computers, impeding their performance
- Soon after, the so-called Nachi worm appeared
  - Took control of vulnerable computers
  - Located and destroyed copies of Blaster
  - Downloaded patch to fix security problem
  - Used computer as launching pad to try to “infect” other vulnerable PCs with killer worm
Evaluation using Rule Utilitarianism

• Proposed rule: If one can write/launch a helpful worm that removes a harmful worm from infected computers and protects others from attack, one should do so.

• Who would benefit?

• Who would be harmed?

• What is balance?
Case for Rule Utilitarianism

- Compared to act utilitarianism, it is often easier to perform the utilitarian calculus.
- Moral rules survive exceptional situations.
- Avoids much of the problem of moral luck.

Workable ethical theory.
Case Against Utilitarianism

• All consequences must be measured on a single scale.

• Utilitarianism ignores the problem of an unjust distribution of good consequences.

• Utilitarianism does not mean “the greatest good for the greatest (or neediest) number”

• That requires a Principle of Justice

• What happens when a conflict arises between the Principle of Utility and a Principle of Justice?
Social Contract Theory

- Thomas Hobbes
  - We implicitly accept a social contract
    - Establishment of moral rules to govern relations among citizens
    - Government capable of enforcing these rules when enacted as laws
Social Contract Theory

- Jean-Jacques Rousseau
- In an ideal society, no one is above the rules
- That prevents society from enacting bad rules
Social Contract Theory

- Ethical analysis performed in terms of people's rights
- Society designated rights for its members
- Ethical actions are those that do not violate member rights... do no harm
Kinds of Rights

• Negative right: A right that another can guarantee by leaving you alone to do something (right to vote)

• Positive right: A right obligating others to do something on your behalf (right to education)

• Absolute right: A right guaranteed without exception

• Limited right: A right that may be restricted based on the circumstances
DVD Rental Scenario

- Bill owns chain of DVD rental stores
- Collects information about rentals from customers
- Constructs profiles of customers
- Sells profiles to direct marketing firms
Social Contract Analysis

- Consider rights of Bill, customers, and mail order companies.

- Does customer have right to expect name, address to be kept confidential?

- If customer rents DVD from Bill, who owns information about transaction? Ownership determines rights.
Social Contract Analysis

• If Bill and customer have equal rights to information, Bill did nothing wrong to sell information.

• If customers have right to expect name and address or transaction to be confidential without giving permission, then Bill was wrong to sell information without asking for permission.

• If customer gives limited right to information only for rental transaction, then Bill was wrong.
Case for Social Contract Theory

• Framed in language of rights

• Explains why people act in self-interest without common agreement... they have the right to so act

• Provides clear analysis of certain citizen/government problems

• Workable ethical theory
Case Against Social Contract Theory

- No signed contract, disagreement on rights
- Some actions have multiple characterizations
- Conflicting rights problem
John Rawls’s Principles of Justice

• Each person may claim a “fully adequate” set of basic rights and liberties, so long as these claims are consistent with everyone else having a claim to the same rights and liberties
John Rawls’s Principles of Justice

- Any social and economic inequality must
  - Be associated with positions that everyone has a fair and equal opportunity to achieve
  - Be to the greatest benefit of the least-advantaged members of society (the difference principle)
General Procedure for Ethical Analysis

- **Step 1: Clarification**
  - clarify the facts
  - clarify stakeholders
General Procedure for Ethical Analysis

- Step 2: Identify the Question
  - understand ethical questions/issues
  - Should who do what?
General Procedure for Ethical Analysis

- Step 3: Preliminary Analysis
  - Mom test
  - TV test
  - Smell test
  - Golden Rule
  - Obvious legal consideration
General Procedure for Ethical Analysis

• Step 4: Theory-based Analysis
  • Kant
  • Utilitarianism (Act or Rule)
  • Social Contract
Kantian Analysis

- Universal Rule
  - look for self contradiction or defeat
- Person as end, not means
  - look for use of person, not respect
Utilitarian Analysis

- stakeholders
- weigh the consequences
  - of act or of general rule
Social Contract Analysis

• consider rights (positive and negative)
• look for violations or failures
Procedure for Ethical Analysis

• Step 5: Decision and Implementation
  • decide on an ethical course of action
  • implement that action
Scenario I

- Anti-Spam is dedicated to reducing spam.
- Urges an East-Asian country to stop spammers.
- When nothing done, puts country’s ISP’s on a blacklist.
- Many US ISP’s use blacklist to filter emails, stopping most emails from that country.
- Spam drops 25% in US.
Scenario 1

• Should Anti-Spam have posted the country on blacklist?

• Should the ISPs refuse to accept email from the blacklisted ISPs?

• Could Anti-Spam have achieved its goals through a better course of action?
Scenario 2

- East Dakota State Police installs web cameras connected to speed guns on all overpasses
- Software can read license plates and match drivers faces to owner images on license
- Automatically issue speeding tickets; speeding is greatly reduced on freeway
- FBI asks for access to videos and EDSP gives it to them; three months later FBI apprehends members of a terrorist group from evidence
Scenario 2

- Should the East Dakota State Police (EDSP) have put up the cameras?
- Should they have allowed the FBI access to videos?
- What other courses of action could the EDSP have taken to achieve its objectives?