

WHY?

Why do we study philosophy and its derivative ethics?

- ▶ And why do we study the branch of philosophy called ethics?
- ▶ And why would we assert that there is a distinct field that can be fairly termed “computer ethics”?
- ▶ Isn't ethics indivisible?
- ▶ Are not the ethics of this age the same as Greek philosophers 30 centuries ago?

The why of philosophy

- ▶ In mathematics and the sciences, we study structures that are both discoverable and that we are able to fit into a coherent framework (“coherable”).
- ▶ Philosophy is distinct in that while it is also based on applying thought, it is far more personal; like the Red Queen of Wonderland, the art of philosophy is wide-minded enough to support many contradicting bases.

Ethics

- ▶ Decisions about right and wrong are ethics in action.
- ▶ You can break ethical considerations into three layers:
 - ▶ A top layer of the “whys” of ethics (meta-ethics)
 - ▶ A middle layer of theories of ethical systems that define the norms used to measure ethical behavior (normative ethics)
 - ▶ A bottom layer of the application of ethical theories (applied ethics)
- ▶ Some people include other layers, such as a layer of “descriptive ethics” or “comparative ethics”.

Measuring ethical behavior

- ▶ The normative ethical systems that get the most attention are
 - ▶ *Deontological* systems: The various types of deontological ethics are based on the precept of duty, and generally share the maxim “the ends never justify the means.” The foremost philosopher in the deontological school was Immanuel Kant (“Fundamental Principles of the Metaphysics of Morals”).
Natural law: These deontological systems hold that ethical behavior is defined by recognizing and honoring the existence of inherent rights that all people naturally possess.

Measuring ethical behavior

- ▶ [continued]
 - ▶ *Consequentialist* systems (aka telological systems): The various consequentialist schools are based on measuring the consequences of actions. They all share some version of the maxim “the ends justify the means.” The most popular schools of consequentialism are based on Jeremy Bentham’s formulation of utilitarianism. His protege, John Stuart Mill, was probably the greatest writer on utilitarian principles (“Utilitarianism”).

Measuring ethical behavior

- ▶ [continued]
 - ▶ *Virtue* systems: Virtue ethics is based on the idea that “good people do good things.” It emphasizes character; the foremost name in this school is Aristotle (“Nicomachean Ethics”). (It is reasonably common to count Confucian ethics as a member of this category; if you believe this, I would suggest that other Eastern systems might also be reasonably considered virtue systems.)

Science and ethics

- ▶ Despite the emphasis on standards of behavior, ethics is not a science and we should not expect that ethical theories have the same characteristics that we expect of scientific theories.
- ▶ For computer scientists, we have a heavy bias toward empiricism: our theoretical foundations lie in logic and mathematics, and our vocation lies in applying these foundations. Applied ethics, such as the ACM Code of Ethics, probably have the most resonance for us.
- ▶ The centrality of the Popperian concept of falsifiability is one that, while it has a strong intuitive appeal to the scientific mindset, is not clearly a necessary part of any ethical framework.

Philosophy, ethics, morals, and not laws

- ▶ The idea of law is a very old one; the Code of Hammurabi dates back some 2700 years.
- ▶ The rule of law is an imposition of force; often there is some sort of code and processes for executing this code, but certainly not always.
- ▶ Legal systems are not ethical systems – although of course it is possible that a given legal system might have its foundations in some sort of ethical concepts, and its actions might even conform to some ethical theory.
- ▶ It is an error of the first order to mistake a legal system for an ethical system.

Is computer ethics distinct from just unadorned ethics?

- ▶ This is not a settled question. While it is clear that computers have brought new problems into the world, it's not clear that computers have introduced new categories of problems. (See the Maner/ Johnson debate link on the class page.)

Is computer ethics distinct from just unadorned ethics?

- ▶ It seems to me that the ethical issue central to the computer ethics issue is that of automation. The most apposite current example is likely that of the automation of consumer vehicular traffic; the idea of the “autonomous vehicle” seems to be something clearly in the field of computer ethics that is distinct from ethics absent the idea of automation.

Is computer ethics truly a distinct subject?

- ▶ Wiener would argue yes; indeed, in *The Human Use of Human Beings* (HUHB), he argues that the creation of automata even poses aspects similar to the creation of life. (E.g., see Chapter III).
- ▶ Moor certainly did; viz. What is Computer Ethics?, http://www.cs.utexas.edu/~ear/cs349/Bynum_Short_History.html

Is computer ethics truly a distinct subject?

- ▶ Gorniak argued that computer ethics will become global ethics; viz., From computer ethics to the ethics of global ICT society
- ▶ Floridi argues that computer ethics should instead become information ethics; viz., Information Ethics: On the Philosophical Foundation of Computer Ethics, his personal website: <http://www.philosophyofinformation.net/>

Is computer ethics truly a distinct subject?

- ▶ Bostrom's take on the ethics of artificial intelligence work:
<http://www.nickbostrom.com/ethics/ai.html>; Bostrom's
personal page for his writings

Topics that we will cover this semester

- ▶ Various codes of ethics
- ▶ Computer Science and Ethics
 - ▶ Scientific Ethics
 - ▶ Professional Ethics
 - ▶ The intersection of technology and ethics

Topics that we will cover this semester

- ▶ Ideas that structure our world of computer science
 - ▶ The mathematical basis of computer science
 - ▶ State as data and state as activity
- ▶ Computer science and “The Curious Idea of Intellectual Property”
- ▶ Implications of apply TCIP to mathematics and to computer science

Topics that we will cover this semester

- ▶ Computer science creating new computer technology and applications
 - ▶ Technological implementations and their limitations
 - ▶ Is it “right” to create some technology?
 - ▶ What are the ethical issues in creating, say, a “Skynet”?
 - ▶ What about other tools? Are there ethical and moral issues involved in creating tools that have multiple applications?

Topics that we will cover this semester

- ▶ Computer science creating new computer technology and applications
 - ▶ What about badly made tools? Are there ethical and moral issues in employing a “rapid” model of software development where developers routinely turn out shoddy and dangerous code? Do you want to ride in a Tesla developed under such a model? How about an Airbus?
 - ▶ The possible obsolescence of work.
 - ▶ The ethics of encryption.
 - ▶ The surprising danger of superintelligence.

Topics that we will cover this semester

- ▶ Stewardship
 - ▶ When we are entrusted with people's property and data
 - ▶ Fortunately, we have millennia of experience with the idea of stewardship (also we have the well-developed ideas of “fiduciary duty” and “contractual obligations”)
 - ▶ How does the digital world relate to traditional stewardship responsibilities?

Topics that we will cover this semester

- ▶ Social media's social impacts
- ▶ What has worked in the social aspect of computing
- ▶ Laws, legalities, jurisdictions, and ethics
- ▶ Civil liberties in the digital age
- ▶ Big Data + Internet of Things = Pervasive Surveillance