COMP3056 (2018-19)
Professional Ethics in Computing

Lecture 01
Introduction & Administration

(Largely based on J. Cartlidge's lectures 2016/17)

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Office: Greenaway 309L.
Office Hours: Mon 10-12

[Please email at least a day before to make an appointment]

What is ethics?

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Morals define personal character, while **ethics** stress a social system in which those morals are applied.

Ethics point to **standards or codes of behavior** expected by the group to which the individual belongs. This could be national ethics, social ethics, company ethics, professional ethics, or even family ethics.

Module Content

- Professional ethics within the scope of computing

- Professional, ethical, social and legal issues:
  - impact that computer systems have in society
  - implications of this from the perspective of the computing profession.

- In particular, the module covers topics such as:
  - introduction to ethics, critical thinking, professionalism, privacy, intellectual and intangible property, cyber-behaviour, safety, reliability, accountability, all these within the context of computer systems development.

Aims

Acquire the ability to recognise the professional, ethical, social and legal issues involved in the use of computer technology, and guidance by the adoption of appropriate professional, ethical and legal practices.

Apply professional ethics perspectives to real-life situations and to reflect on one's own experience and practice.

To understand and be able to participate within the professional, social and legal framework within which one would have to operate as a professional.

Learning Outcomes

Knowledge and Understanding:

1.1 Ethics theories. 1.2 Privacy issues in computer systems. 1.3 Cyberbehaviour through computer systems. 1.4 Intellectual and intangible property. 1.5 Safety, reliability and dependability. 1.6 Sustainability and social issues in computing.

Intellectual Skills

2.1 Pervasive nature of computer systems. 2.2 Ethical reasoning and deliberative discussions.

Professional Skills:

3.1 The nature of professionalism. 3.2 Professional codes in computing. 3.3 Accreditation/certification/licensing of computing professionals.

Transferable Skills:

4.1 Critical thinking. 4.2 Reasoning and communicating arguments.

Module Details: Classes

Weekly Lecture:

Monday: 09:00-10:00 DBA06+

Weekly Workshop:

- Wednesday: 11:00-12:30 DBA06+
- **Compulsory (attendance will be taken)**
- Students work in small groups.
- Individual and group activities to be completed by the end of each workshop
- **Talking** (deliberative ethical discussion) **is very important!**

Module Details: Assessment

Exam: (50%) – end of semester

1 hr written exam

Develop discursive arguments using ethical frameworks

Coursework 1: (25%) – on-going!

Weekly workshop assignments (individual and group-based activities)

Marks accumulate over the semester (so do not miss a workshop or you will be losing marks!)

Coursework 2: (25%) – issued week 9

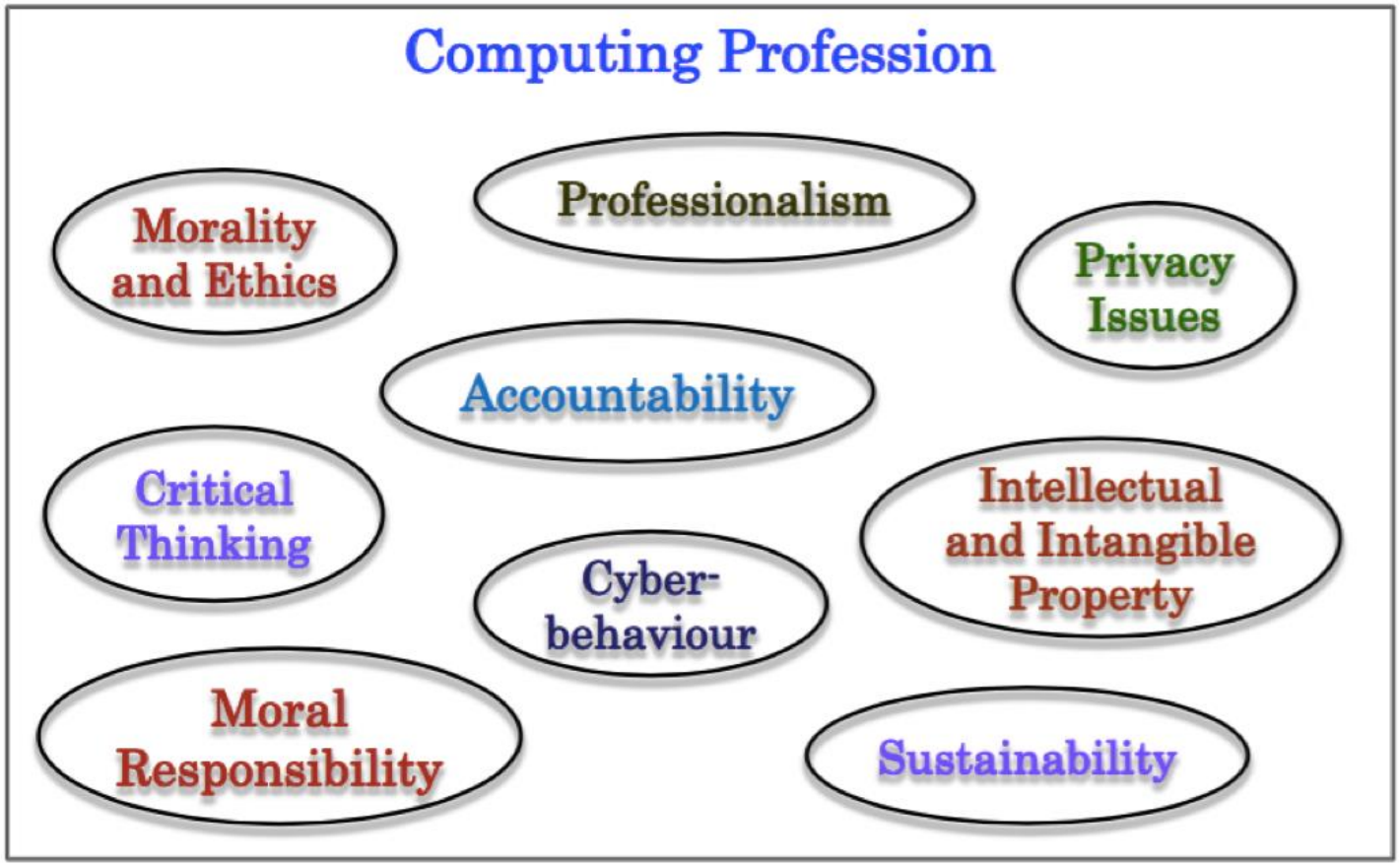
Case study analysis (discursive ethics discussion)

Module Outline

Teaching Week	*Contents*
2 (26 Sept)	*Lecture 1: Introduction and Administration*
3	*National Holiday*
4 (8 & 10 Oct)	Lecture 2: Critical Reasoning and Moral Theory 1
5 (15 & 17 Oct)	Lecture 3: Critical Reasoning and Moral Theory 2
6 (22 & 24 Oct)	Lecture 4: Computing Professionals and Professional Ethics
7 (29 & 31 Oct)	Lecture 5: Privacy
8 (5 & 7 Nov)	Lecture 6: Intellectual and Intangible Property
9 (12 & 14 Nov)	Lecture 7: Critical Thinking [Coursework 2 Release, Nov 12, 2018]
10 (19 & 21 Nov)	Lecture 8: Trust, Safety and Reliability
11 (26 & 28 Nov)	Lecture 9: How Computing is Changing Who We Are
12 (3 & 5 Dec)	Lecture 10: Computing and Vulnerable Groups
13 (9 & 11 Dec)	Lecture 11: Autonomous and Pervasive Technologies CW02 due (Dec 12, 2018) Workshop: Revision and Exam Guide

Questions ?

Module Topics



Are these important?

Video – Driverless Cars [BBC Newsnight]

https://www.youtube.com/watch?v=FypPSJfCRFk

Questioning ethics of ‘Smart Cities’ is crucial in making sure privacy is not lost

https://www.youtube.com/watch?v=7sWnNzczF90

Designing for the internet of things

https://www.youtube.com/watch?v=tcUvg9jcfG8&t=77s

Computers in the World

- They are pervasive
- They are making decisions
- They are responsible for our lives
- But who builds them?
  - Hint: You!

It's important then

- When facing ethical issues in the future:
  - We might not recognise them
  - We may automatically the "easy" thing
  - We may do things we subsequently regret
  - We may get ourselves and our employer into trouble
  - We may miss the opportunities we have

Ethics Theory **Practical Ethics** **Professional Ethics**

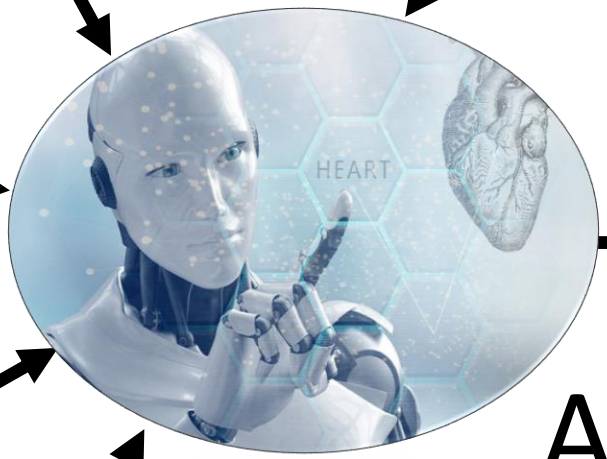
more general *more specific*

WORKSHOPS…

Wearables

Medical monitoring

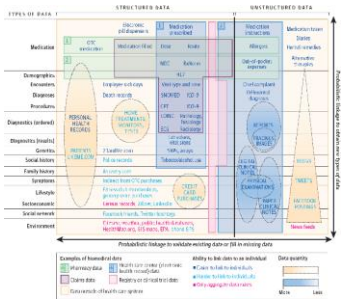
Smart home 智能家居



AI

Appropriate action:
alarm,
reminder,
report,
education,
see doctor,
call doctor, ...

Medical data



Medical knowledge

Deliberative Ethical Discussions

This module is likely to be very different to other CS modules that you have taken

"Ethical question" has no right/wrong answer

Can't use formal logic, or mathematics to help us!

You can't ask convenor for the answer!

Deliberative Critical Discussions will be used to consider scenarios from an ethical perspective

Therefore talking is important….

If you don't talk you won't get marks!

Deliberative Ethical Discussion

- No winner in a successful deliberative critical discussion
- Everyone is well-intended
- No persuasion without rational substantive basis
  - Every person speaks one at a time
  - No charged language, exaggeration or rhetorical devices
  - No attacks to the individual

Scenario 1

Alice and Josh, two first-year undergraduate students, are good friends. Josh tells Alice that his account in the University network has been disabled and he needs to complete a paper for his English class. He asks Alice to give him her password so that he can log on to her account and write the paper. Because Alice considers Josh to be a close friend, she provided him with her password. Josh logs onto Alice's account, and completes his paper for English. He did not look at the content of any of Alice's files, nor did he delete or modify anything. He simply wrote his paper and logged off the system.

Scenario 2

Now consider a variation of the scenario 1. Josh is a computer science student in his final year. Alice has graduated from computer science and is working for a software development company as a software engineer. Josh asks Alice to use her company account instead. As before, Josh simply wrote his paper and logged off the system.

Scenario 3

Now consider a variation of the scenario 1.2. Josh completed his paper and emailed it to his professor before logging off Alice's account. Alice's company monitors email traffic and detected that an email with an attachment of a file in Alice's directory had been sent to a server outside the company's network. Alice's boss, Carol, confronted Alice, who readily admitted her transgression of company policy. Carol viewed Alice's action as a cavalier disregard for company security and fired her. Alice was given 2 weeks' pay and escorted off the premises.

Textbook pp 2-4

Reflection questions Scenario 1

Reflection questions Scenario 2

Reflection questions Scenario 3

Position vs Context questions

FINAL THOUGHTS …

Formal Ethics Instruction

It has increased significantly in science and engineering higher education in the last two decades.

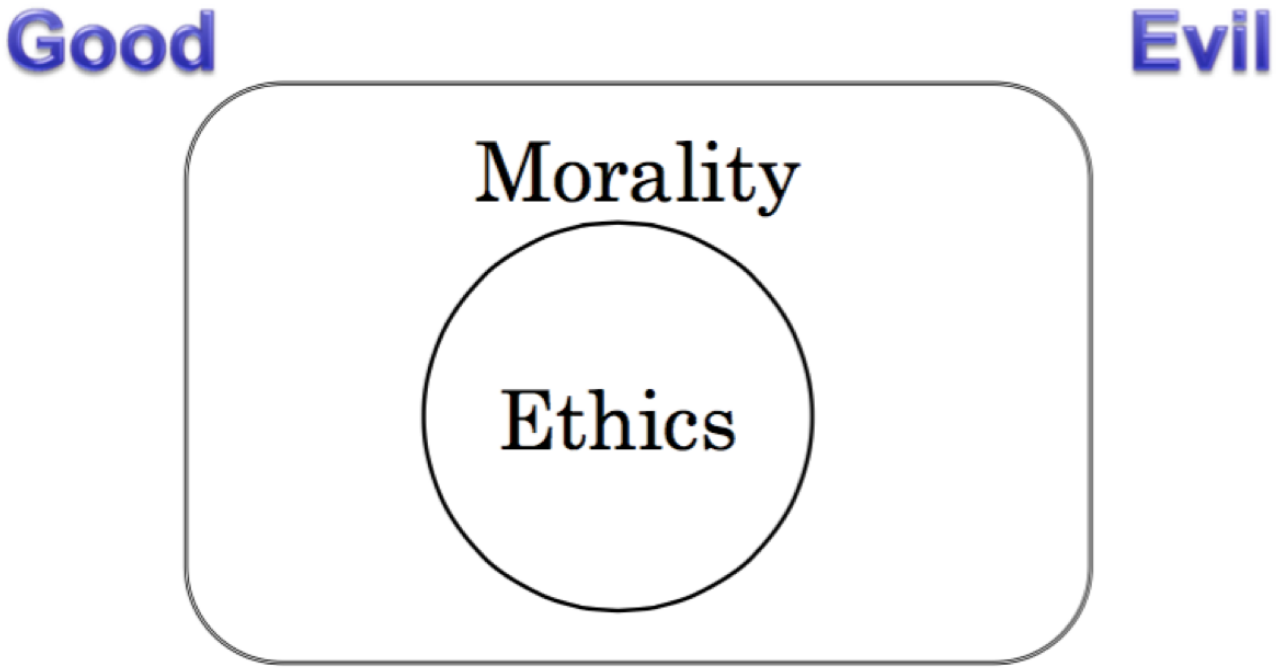
Funding agencies, professional accreditation bodies and industry require a professional ethics approach.

Value of science and engineering for society, commitment to objectivity and truth, promote safety health and welfare of the public.

"Computing students tend to be very strategically-orientated and reject material which seems to them to be of no direct relevance to their career development."

Is it all just about 'common sense'?

Becoming More Ethical



Becoming More Ethical (cont)

- Clarify what is “right” or “good” and what is “wrong” or “evil”
- Develop awareness of ethical dimensions of life and work
  - Identify potential relevant information and choices, including those specific to your profession
- Develop skills at reasoning ethically
  - Analysing choices and arguments with ethical aspects
- Apply a more ethical approach in your studies (e.g. individual projects)
- Opportunity to rehearse what you would do in possible future situations

What's next…

Workshop at 13:00

We will form groups then