Social, Ethical & Professional Issues in Computer Science

# CSCI 3101: Reading Assignment 1

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1. Explain why computer ethics generates so many ethical questions.

## Computer Ethics generates so many ethical questions because computers, and the Internet have made invisibility virtually possible.

Invisibility may not be physically possible, but the topic of how to behave if it were has been discussed by philosophers for many years[[1]](#endnote-1). Spying on others, and gathering information with out their knowledge or consent is widely regarded as an infringement on ones privacy. But how does one know who is spying on them when they are connected to the Internet? If a person drove the nearest giant retail store, and that store was so determined to profile the shopper’s habits and interests that they had spies tail their car after exiting, that person’s privacy has been invaded. The Internet however, enables retailers to do just that, and more. When you visit an online store *third-party cookies* are stored on your computer. Typically, with a first party cookie, only the site that created the cookie has access to the information it stores, but with a third party cookie, a new party is involved in the process. In the spy example, several stores have now contracted the same spy to follow the same shopper; the spy can charge all the storeowners for the same information gathered. Companies contract third party cookie providers to collect data because they have access to more users and more sites and thus more data[[2]](#endnote-2). A user may have never visited site X, but after searching for items a, b and c on site Y, they could be shown recommendations for those items immediately upon visiting site X. The Internet browser displays only a portion of the information that is actually transmitted through the Internet. It’s not just the hackers and criminals that hide behind the Internet, invisible to the average user, it’s household name Corporations[[3]](#endnote-3).

2. Identify and provide an example of an ethical issue that arises in one of the five technologies discussed.

## Where is it ethical to implement and integrate our current technologies onto embodied artificial agents and who then becomes responsible for their actions?

What the world sees today in Autonomous Systems, and Robotics, is years behind what today’s researchers and developers consider state of the art[[4]](#endnote-4). Developers have known from the reaction of the general public to Hollywood Sci-Fi movies that they would need to introduce their products in a way that would not scare the public. Sony had long-term robotics plans and goals that were almost ruined by their slow response to mp3 players[[5]](#endnote-5). But many producers of household and manufacturing robots[[6]](#endnote-6)[[7]](#endnote-7) have tried to make their products appealing; some would even call the DARwin-OP or Aldebaran Robotics’ NAO ‘cute’. Technologies for autonomous robotics have progressed rapidly in recent years[[8]](#endnote-8) and most already know that Google, Stanford and Freie Universität Berlin have cars with ability to navigate in real world amongst human drivers. Most agree that the pilot alone can’t fly a modern fighter jet; they can only stay in the air with the help of computers. But this technology already extends drones[[9]](#endnote-9) military fighter jets can fly themselves, and warships can navigate across oceans without human interaction in the event the crew can’t do so. Household care robots[[10]](#endnote-10) are designed for assisting with chores and caring for elderly, but the technology for medical robots to perform surgery exists. The question that arises from all of this who is responsible when the system fails? Today’s complex robots can be microscopic, or as large as warships, and consist of many integrated computers, sub-systems, sensors and actuators. System failure is inevitable. Fault detection is desired, and being developed, but not required. The technology for autonomous robots to do just about anything exists; does this mean we should do it? Who is responsible if there is a death on a roadway, in the air, on the sea or in a hospital operating room?References

# Bibliography

James Rachels. “The Right Thing To Do: Basic Reasings in Moral Philosophy” (2011)

Luciano Floridi. “The Cambridge Handbook of Information and Computer Ethics” (2010)

1. *The Right Thing To Do: Basic Readings in Moral Philosophy. Chapter 1* [↑](#endnote-ref-1)
2. Floridi, Chapter 1. Does not go into specifics, but gives an idea of how much data is now being produced. [↑](#endnote-ref-2)
3. An example would be the store ‘Target’ who predicted a teen’s pregnancy and sent her targeted mail before her father knew, lawsuit followed. (Paper was read last semester for machine learning class covering the data mining process behind it, unable to locate original source.) [↑](#endnote-ref-3)
4. The specific number of years is varies from between 10 to 25, but largely depends on the sub domains within the field. [↑](#endnote-ref-4)
5. Case study of Sony Patients from the early 90’s for a class last semester, again I no longer have the papers. [↑](#endnote-ref-5)
6. Honda, Toyota, Samsung, Willow Garage, Kuka, Fanuc, iRobot… [↑](#endnote-ref-6)
7. Boston Dynamics is the exception that comes to mind. Their military robots would terrify most. [↑](#endnote-ref-7)
8. DARPA: Grand Challenge results and records. [↑](#endnote-ref-8)
9. Floridi, Chapter 13 [↑](#endnote-ref-9)
10. For example Fraunhofer’s: Care-o-bot [↑](#endnote-ref-10)