

# Human Computer Interaction CS449 – CS549

Week 14

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## Ethics - Term Project

KÜRŞAT ÇAĞILTAY

# What is Ethics

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“Ethics”— derived from the Greek word “ethos”. Refers to a person’s orientation toward life.

Ethics concern the standards, values, morals, principles, etc., that we use as the basis for our judgment or behavior

Essentially, it is about right and wrong Behaviour



# Why is it relevant to HCI?

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- SW engineers need to be aware the consequences of actions
- We are often asked to do things that create ethical dilemmas
- We have powerful tools at our command that we can do significant things with – Good or Bad
- Needs of individuals, societies, organizations: Sometimes in conflict

# Examples

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Boss asks you to monitor employees' email or web traffic

- –Legal or illegal
- –Ethical or unethical – When is it ethical?

Company needs to catch up deadline and release the SW

- You know there are bugs, not enough tests
- What if someone hurts/dies because of errors? Who is responsible?

# Information Systems and Ethics

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Information Systems ethics consists of three major elements.

- **Technical ethics**-- doing a technically competent job at all phases of the IS development process,
- **Professional ethics**--a set of moral values to guide the technical decisions
- **Social ethics**--social work's person-in-environment, changing needs of individuals, groups, organizations

# Theories of Ethics

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## **Utilitarian Theory (Consequentialist theory)**

- performing a social cost/benefit analysis and acting on it

## **Deontological Theory (Universalist ethical theory-Kantian)**

- follow exactly the same universal principles – Do duty

## **Contractarian Theories (Just Society Theories)**

- Examine the nature of social arrangements rather than on individual acts

# Ethics in IT: Imposed by companies?

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The conflict between educational priorities and intellectual property protection is, on one level, a moral question -- what do we as a society think is more important?

LA school district, installed software without licence

BSA took it to court \$300,000 fine (originally \$20M)

BSA told teachers -- who can't get enough services to kids already -- that they were committing crimes

"In the court of public opinion, the BSA lost" David Tokofsky, a member of the Los Angeles school board



# Digital divide vs. ethics

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"The copyright law should be applied universally. What is it we're trying to teach these children anyway? Are we teaching them that its OK to steal? The message we need to get to them is that intellectual property deserves to be respected." Jenny Blank, BSA's director of enforcement – Deontological-Kantian

“...get more poor kids connected to the computer, and that should matter more than intellectual property” "It's kind of like AIDS in Africa and the drug companies," Kowalski says. "Can anyone expect a dying person to be concerned about the drug companies' profits?" Lloyd Kowalski, Philadelphia computer teacher - Utilitarian



# Legal vs. Ethical

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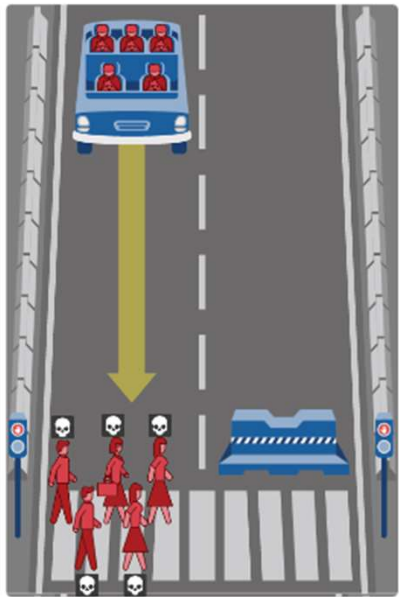
	Ethical	Unethical
Legal		?
Illegal	?	

# Cases

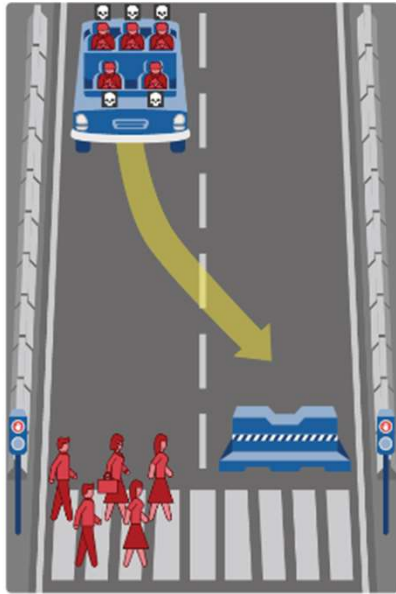
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- Assume you are going to work for an automobile company
- They produce driverless cars
- You are going to train the cars to act in case of accidents
- If the accident is inevitable, who would the car sacrifice?
- Should cars act differently in different countries/cultures?






Hide Description



Hide Description

moralmachine.net


**MORAL MACHINE**

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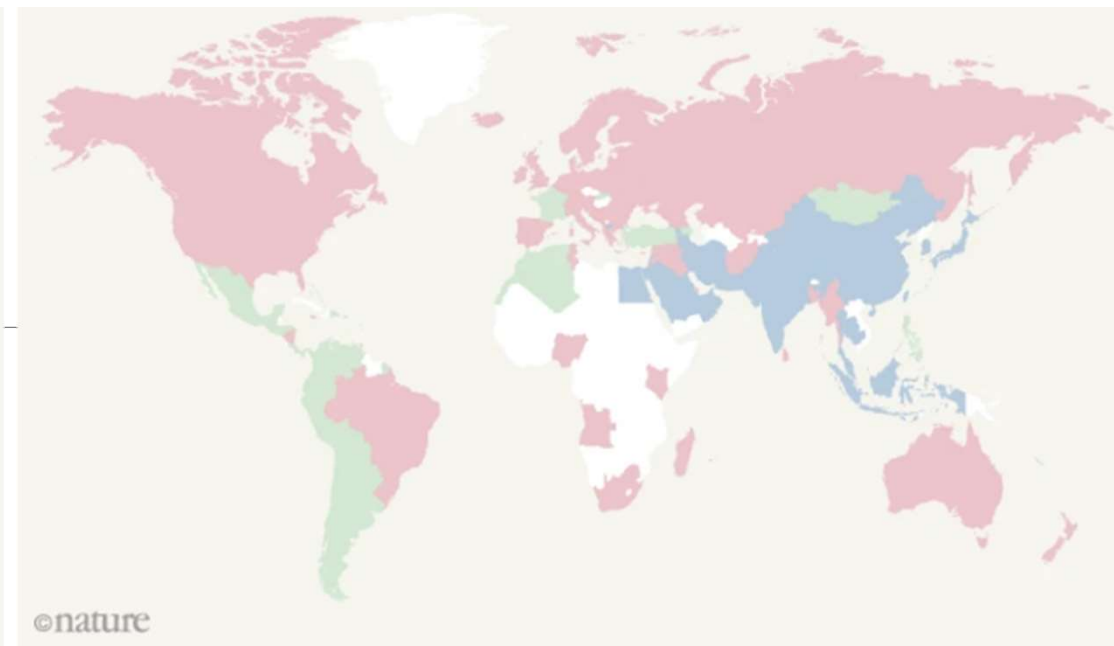
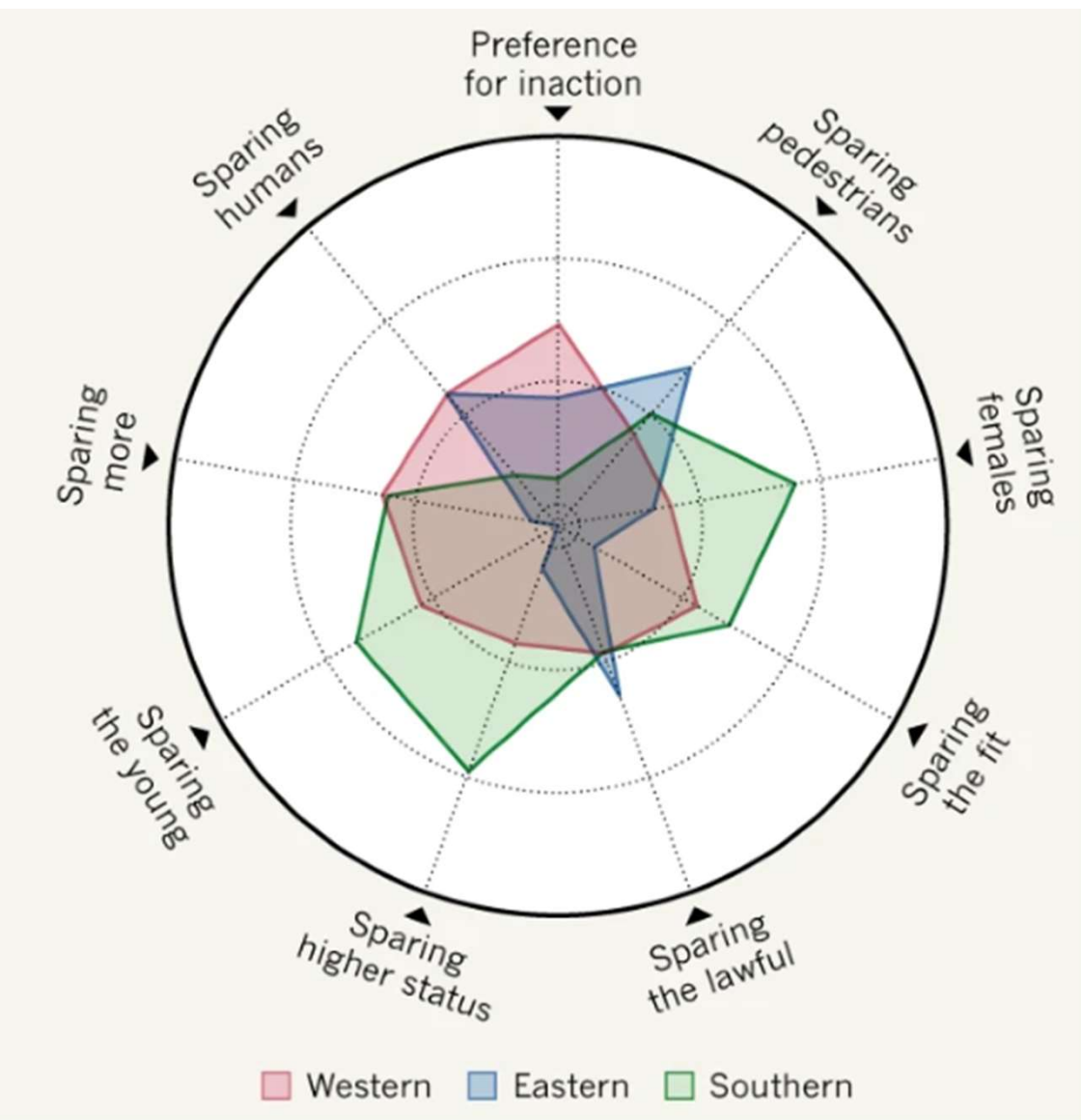
Welcome to the Moral Machine! A platform for gathering a human perspective on moral decisions made by machine intelligence, such as self-driving cars.

We show you moral dilemmas, where a driverless car must choose the lesser of two evils, such as killing two passengers or five pedestrians. As an outside observer, you **judge** which outcome you think is more acceptable. You can then see how your responses compare with those of other people.

If you're feeling creative, you can also **design** your own scenarios, for you and other users to **browse**, share, and discuss.

[Start Judging](#)
[Browse Scenarios](#)
[View Instructions](#)





E.g. Finland and Japan hit people who cross the road on red, but not in Pakistan and Nigeria

Columbia chose to kill lower status person, Finland shows no preference

# Electronic Monitoring Smyth vs. Pillsbury Co. in 1994

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Company policy: e-mail is confidential, no one would be fired based on intercepted e-mail

Private e-mail: sent from home computer to a supervisor at work

- “kill the back-stabbing bastards” (sales mgmt)

It was later read by company executives

Smyth was fired (reason: inappropriate and unprofessional comments)

Legal? Ethical?



# Email Privacy in Organizations

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Case: Bourke vs. Nissan Motor Corp.

Two software specialists were forced to quit after a supervisor read their personal email correspondence, which included sexual statements.

Balance between

- the employer's property rights, and
- the employee's reasonable expectation of privacy

# How about in Turkey?

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**In your workplace, will you send/forward personal e-mail messages to your friends?**

"İşçinin şirket bilgisayarını, mesai saatleri içinde, kişisel mailinde kullandığı, bir haberi, işyerinde çalışan bir çok arkadaşının mailine gönderdiği anlaşılmaktadır. İşçinin bu davranışı, şirketin iç işleyişi ile ilgili düzenlenmiş kurala aykırı olduğu gibi, işçinin; mesai saatleri içinde, kişisel ihtiyaçlarında, işyeri bilgisayarını kullanarak, iş görme yükümlülüğünü yeterince yerine getirmediği, bu davranışının da işyerinde olumsuzluklara neden olduğu anlaşılmaktadır. Bu nedenle, iş sözleşmesinin feshi olayının geçerli nedene dayandığına..." oybirliğiyle karar verilmiş (Yargıtay 9.Hukuk Dairesi'nin, 5.2.2007 Tarih ve E.2006/30107, K.2007/2011 sayılı kararı).

Can company  
employers monitor  
employees'  
computers?

Ethical? Legal?



**İşverenler çalışanlarının bilgisayarını  
inceleyebilir mi?**



# Legal! You can't use it for personal work

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22'nci Hukuk Dairesi'nin 3 Mayıs 2016 tarihli kararında konu şu şekilde belirtilmiş: "... görevi gereği işverenin işlerini yürütmesi için kendisine (çalışana) verilen bilgisayar üzerinde davalı şirketin inceleme yaptırdığı anlaşılmaktadır. İşverenin kendisine ait bilgisayar ve elektronik posta adresleri ile bu adreslere gelen elektronik postaları her zaman denetleme yetkisi bulunmaktadır. Kaldı ki, davacı işçinin özel işleri için işverenin izni olmadan bilgisayarı kullanması kabul edilemez. Bu sebeplerle, davalı işverenin bilgisayar verilerine delil olarak dayanmasında hukuka aykırılık bulunmamaktadır." (E. 2016/6321, K. 2016/13143)

# Psychotherapist AI?

Welcome to

```
EEEEEE LL      IIII  ZZZZZZ  AAAAA
EE      LL      II    ZZ     AA   AA
EEEEEE LL      II    ZZ     AAAAAA
EE      LL      II    ZZ     AA   AA
EEEEEE LLLLLL IIII  ZZZZZZ  AA   AA
```

Eliza is a mock Rogerian psychotherapist.  
The original program was described by Joseph Weizenbaum in 1966.  
This implementation by Norbert Landsteiner 2005.

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ELIZA: Is something troubling you ?
YOU:   Men are all alike.
ELIZA: What is the connection, do you suppose ?
YOU:   They're always bugging us about something or other.
ELIZA: Can you think of a specific example ?
YOU:   Well, my boyfriend made me come here.
ELIZA: Is it important to you that your boyfriend made you come here ?
YOU:   He says I'm depressed much of the time.
ELIZA: I am sorry to hear that you are depressed.
YOU:   It's true. I am unhappy.
ELIZA: Can you explain what made you unhappy ?
YOU:
```

# Artificial Intelligence (1)

<https://web.njit.edu/~ronkowitz/eliza.html>

Patient	ELIZA
Men are all alike.	In what way?
They're always bugging us about something or other.	Can you think of a specific example?
Well, my boyfriend made me come here.	Your boyfriend made you come here.
He says I'm depressed much of the time.	I'm sorry to hear that you are depressed.
It's true, I am unhappy.	Do you think that coming here will help you not to be unhappy?
I need some <u>help</u> , that much seems certain.	What would it mean to you if you got some help?

## Artificial Intelligence (2)

Patient	ELIZA
Perhaps I could learn to get along with my mother.	Tell me more about your family
My mother takes care of me.	Who else takes care of you?
My father.	Your father.
You are like my father in some ways.	What resemblance do you see?
You are not very aggressive but I think that you don't want me to notice you.	What makes you think that I am not very aggressive?
You don't argue with me.	Why do you think that I don't argue with you?

## Artificial Intelligence (3)

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Patient	ELIZA
You are afraid of me.	Does it please you to think that I am afraid of you?
My father is afraid of everybody.	What else comes to you remind when you think of your father?
Bullies.	Does that have anything to do with the fact that your boyfriend made you come here?
Weizenbaum (1984)	

# Artificial Intelligence

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Three possible problems:

- 1.It does not work;
- 2.It makes the condition worse;
- 3.Regardless of whether it works or not, it is dehumanizing to get this sort of help from a machine.

(Weckert & Adeney, 1997)

Question:

How and why is it dehumanizing to receive psychotherapy from a machine?



[standardpatient.org/](http://standardpatient.org/)

## USC Standard Patient

This project is a freeware Virtual Standardized Patient (VSP) community for medical students, residents, continuing medical education and medical educators. VSPs are virtual human avatars that you can converse with (through typing or speech), that talk back, tell a story and are coupled with a feedback system that allows you to improve your performance. VSPs can tell you their stories and can answer most common medical questions that you would ask in a clinic environment.

Try It Now

Sign Up Free



Standard Patient Hospital



Standard Patient Studio





# Human vs AI Ethics?

*The Atlantic*

Sign In

TECHNOLOGY

## ROBOTS ARE ALREADY KILLING PEOPLE

The AI boom only underscores a problem that has existed for years.



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Home > News > AI

## AI-Controlled Drone Decides to Kill Human Operator in 'Thought Experiment'

This hypothetical scenario saw the AI decide to eliminate the human for interfering with mission.



By [Matthew Humphries](#)

June 2, 2023





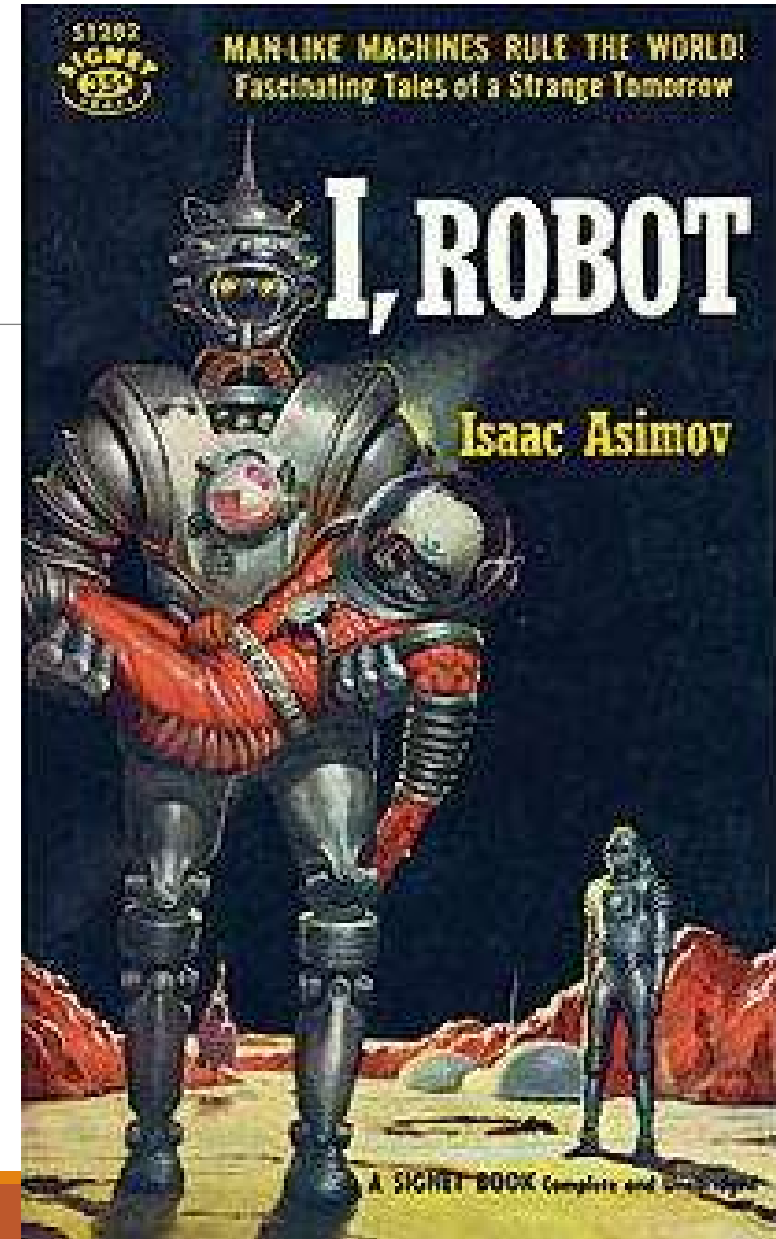
# Three Laws of Robotics -1942

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The First Law: A robot may not injure a human being or, through inaction, allow a human being to come to harm.

The Second Law: A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.

The Third Law: A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.





## Thiemann vs. Harvard Divinity School, 1998

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Respected dean of the school – reported problem with his computer

Pornographic images were discovered on a university-owned computer located in his home (Harvard owned residence - Lojman)

None of the pornography found was illegal

He was forced to resign

Legal? Ethical? Because his home and computer are owned by Harvard, is his whole life owned by the Divinity School?

As an IT person, do you have rights to check his files while upgrading his machine?

# Health Informatics

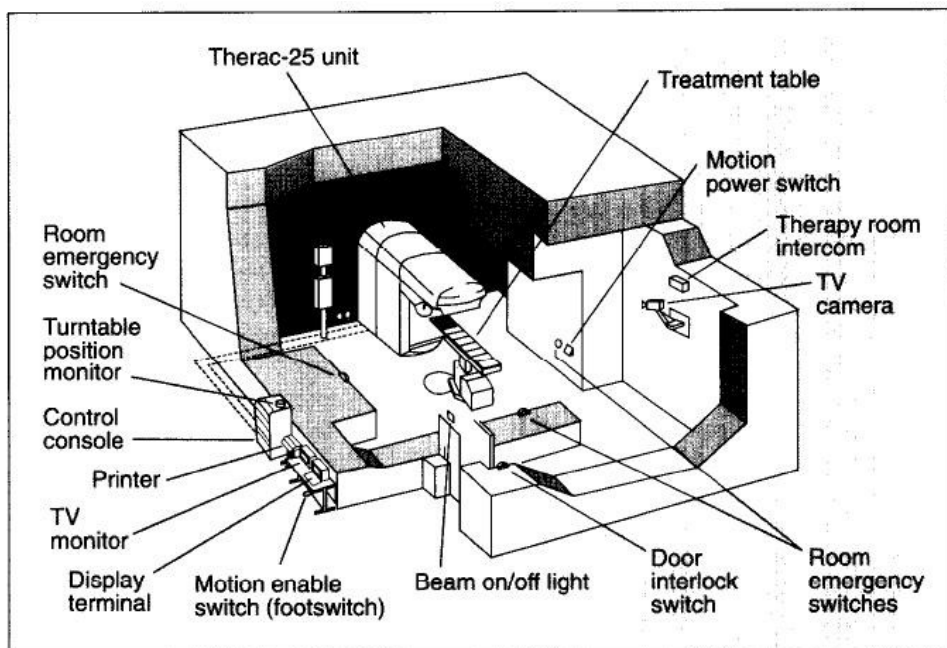
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## Therac-25

Between June 1985 and January 1987, six known accidents involved massive overdoses by the Therac-25 (5 killed). They have been described as the worst series of radiation accidents in the 35-year history of medical accelerators

**There was only *one* person programming the code for this system and he largely did all the testing**

Reference: <http://sunnyday.mit.edu/papers/therac.pdf>



**Figure 1. Typical Therac-25 facility.**



# The Operator Interface

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At first, operator needed to enter information at the treatment table, and then re-enter at a console in the control room

Operators complained; safeguard was removed

Error codes are reported on the screen with no English explanation

- Example: “Malfunction 54” reported, caused by “dose input 2”.
- An AECL technician testified that “dose input 2” means the dose delivered was either too high or too low (!)

“Treatment Pause” after non-critical error, which operator can ignore by pressing “P”


- Causes operators to become insensitive to errors

## Therac-25 case

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Frank Houston of the (FDA) said, "A significant amount of software for life-critical systems comes from small firms, especially in the medical device industry; firms that fit the profile of those resistant to or uninformed of the principles of either system safety or software engineering."

*IEEE Computer*, Vol. 26, No. 7, pp. 18-41



## Lessons Learned

- Software engineers need
  - better training in interface design, or
  - more input from human factors engineers.
- There must be recognition of the potential conflict between user-friendly interfaces and safety.

# Ethics Training

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Unlike doctors and psychiatrists, for whom ethics is an integral part of their training, IT professionals receive no formal ethical training at all

CIO magazine (July 15, 2000)





# ACM - Association for Computing Machinery Code of Ethics

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intended to serve as a basis for ethical decision making in the conduct of professional work

- 1. General Ethical Principles.**
- 2. Professional Responsibilities.**
- 3. Professional Leadership Imperatives.**

<https://www.acm.org/code-of-ethics>  
ACM- (Association for Computing Machinery)



# Final Report – structure (Due January 17th)

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## Empirical

- Gather user data on an HCI topic

## Title

## Abstract

## Introduction

## Method

## Results / Analysis

## Discussion/Conclusion

## References

# Warnings

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Make a pilot test

Keep the variables under control (internal validity)

- E.g conduct tests in the same environment, use standard hardware, use standard instructions

Participant characteristics / Persona

Gender / Education / Background balance

Task shuffling

# Title

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descriptive,  
direct,  
accurate,  
appropriate,  
**interesting!**,  
concise,  
precise,  
unique

# Abstract

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A one paragraph summary

- A statement on objective/purpose of the investigation (**interesting!**)
- Description of participants
- Brief description of what participants did
- Summary of findings

# Introduction

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## Literature review

- Background & rationale (previous research, what they found, what they identify as possible issues/questions)
- Relation/Contribution to your study
- Use: EBSCO, ScienceDirect, SCI, SSCI, etc.
- perplexity.ai

## Statement of purpose

- “The current study was conducted to evaluate the effect of X on Y” .... or ..... “to find out what are the factors that lead to Z” or “to determine the relationship between A and B..”

# Method

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Can I replicate your study - Enough details

Who participated (number, characteristics, volunteer or random)-persona

What materials were employed (systems, questionnaires - design, validity and reliability)

What data was collected (dependent variables i.e. scores, ratings, responses)

What were participants required to do (where, who, sequence of events - include instructions & tasks)

Photo evidences from sessions

# Results / Analysis

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How have the data been treated?

Text and graphs

Statistics - descriptive/inferential

Summarize the results



# Discussion/Conclusion – So What?

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## Interpretation-

- what do the results mean in terms of your original questions
- why do you think they turned out like this
- **Compare/Contrast with the literature**

Critique your study (limitations) and recommend improvements

Suggestions for further research

References in APA format

# Credibility of the study

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Definition of the construct being measured

Congruence between method & question

Measurement

- Bias: instruction & instrument (wording), administering
- Reliability (stable/decision consistency)
  - consistency: e.g. adequate sample size to determine consensus
- Validity

# PILOT your method....

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Try your method before capturing data for real.....

- Ask friends to answer your survey, take your test, perform your experiment etc.
- look for issues that confuse them (or you!) - modify accordingly

# Statistics

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## Descriptive/Inferential

- Mean (median, mode)
- Range
- Standard deviation
- Run tests if you are comfortable (t-test, Anova, etc.)

Provide tabulated raw data if possible, (put in appendices if large)

# Common pitfalls

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## Rambling, unfocused style

- Keep the research question in mind as you write

## All claims and opinions, no evidence

- Cite literature that supports your argument

## Misses relevant topics from class

- Try to see how the readings and lectures fit

**NO PLAGIARISM !!** 

# What have we studied?

1. Introduction: What is HCI and why is it important?
2. From interface to interaction: HCI Theories, frameworks
3. What is a good user interface: Guidelines, Styles, and Evidence
4. Usability engineering
5. Beyond usability engineering: Understanding the user (part 1) Human Cognition
6. Beyond usability engineering: Understanding the user (part 2) Perception
7. Evaluation strategies for usable interface design: Heuristic Evaluation and Cognitive Walkthrough
8. Evaluation strategies for usable interface design: User based testing & eye tracking
9. Evaluation strategies for usable interface design: Cognitive Modeling
10. HCI Research Methods: Quantitative and qualitative
11. Personas, Use Scenarios, and Storyboards
12. Software engineering methodologies and User-Centered Design
13. Accessibility

I hope CS449/549 will be helpful for your future work life

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– Think about MS or Ph.D. in HCI

Good luck with your exams, projects

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No Lecture on Friday

Consultation on your projects in my  
office (If you need)

A solid orange horizontal bar spanning the width of the slide, located at the bottom.