

# CPSC 2910

## Lesson 2

**Connie Taylor**  
**Professor of Practice**



*School of*  
**COMPUTING**

# Today's Topics

- ❖ The Pace of Change
- ❖ Unexpected Outcomes of Change
- ❖ Ethics

# The Pace of Change

*“In a way not seen since Gutenberg’s printing press that ended the Dark Ages and ignited the Renaissance, the microchip is an epochal technology with unimaginably far-reaching economic, social, and political consequences.”*

– Michael Rothschild

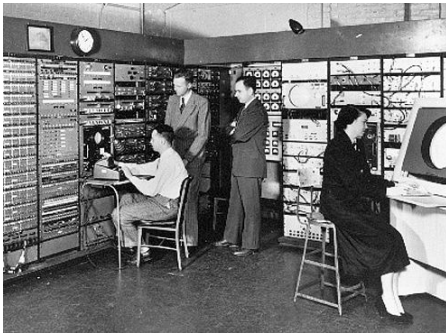
# The Pace of Change

## The Pioneering Era 1955-1965

## The Stabilizing Era 1965-1980

# The Micro Era 1980-2005

## The Cloud Era 2005-now



**Moore's Law:** refers to Gordon Moore's (co-founder of Intel) perception that the number of transistors on a microchip doubles every two years, though the cost of computers is halved.

# The Pace of Change Discussion

*What devices are now computerized that were not originally? Think back 10, 20, 50 years ago.*

# Unexpected Outcomes: Cell Phones

- Relatively few in 1990s. Approximately five billion worldwide today (over half the population) and 3.5 billion smartphones
- Used for conversations and messaging, but also for:
  - taking and sharing pictures
  - downloading music and watching videos
  - checking email and playing games
  - banking and managing investments
  - maps and directions
- Smartphone apps for many tasks, including:
  - monitoring diabetes
  - locating water in remote areas



# Unexpected Outcomes: Cell Phones

- Location tracking raises privacy concerns
- Cameras in cell phones affect privacy in public and non-public places
- Cell phones can interfere with solitude, quiet and concentration
- Talking on cell phones while driving is dangerous
- Other unanticipated negative applications: sexting, terrorists detonating bombs, rioters organizing looting parties





[https://youtu.be/JMLH\\_QyPTYM](https://youtu.be/JMLH_QyPTYM)



# Unexpected Outcomes Breakout

- Social Networking
- Ecommerce
- Artificial Intelligence

# Unexpected Outcomes: Themes

- Old problems in a new context: crime, pornography, violence
- Adapting to new technology: thinking in a new way
- Varied sources of solutions to problems: natural part of change and life
- Trade-offs and controversy: i.e. increasing security means reducing convenience
- Perfection is a direction, not an option
- There is a difference between personal choices, business policies, and law

# What is Ethics?

- ❖ Study of what it means to “do the right thing”.
- ❖ Assumes people are rational and make free choices.
- ❖ Rules to follow in our interactions and our actions that affect others.

# Many Ethical Views

- ❖ Deontological theories – emphasize duty and absolute rules (i.e. it is wrong to lie)
- ❖ Utilitarianism – what is the overall utility of an act?
- ❖ Natural rights – life, liberty, and property (John Locke)
- ❖ Negative rights (liberties) - the right to act without interference
- ❖ Positive rights (claim-rights) - an obligation of some people to provide certain things for others
- ❖ Golden Rules- treat others as you wish to be treated
- ❖ Contributing to society - Doing one's work honestly, responsibly, ethically, creatively, and well is virtuous.
- ❖ Social contracts and a theory of political justice - people willingly submit to a common law in order to live in a civil society.

# Ethical Views: Some Important Distinctions

- ❖ Right, wrong, and okay
- ❖ Distinguishing wrong and harm
- ❖ Personal preference and ethics
- ❖ Law and ethics

# Ethics Discussion

*Can you think of examples of liberties (negative rights) and claim-rights (positive rights) that are at opposition to each other?*

# Next Class

- Read Chapter 2 of the book
- Questions 2.12 and 2.19 from the book

A group of students are starting a **Google Developers Student Club** at Clemson University. They will be hosting an info session at a soon to be determined time next week. If you are interested, please sign up using the link below.

[https://docs.google.com/forms/d/e/1FAIpQLSfJLxR1FEAh1nq71V7IPYMNevdFUs6Ic3nalvrz76Ej2am55g/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLSfJLxR1FEAh1nq71V7IPYMNevdFUs6Ic3nalvrz76Ej2am55g/viewform?usp=sf_link)