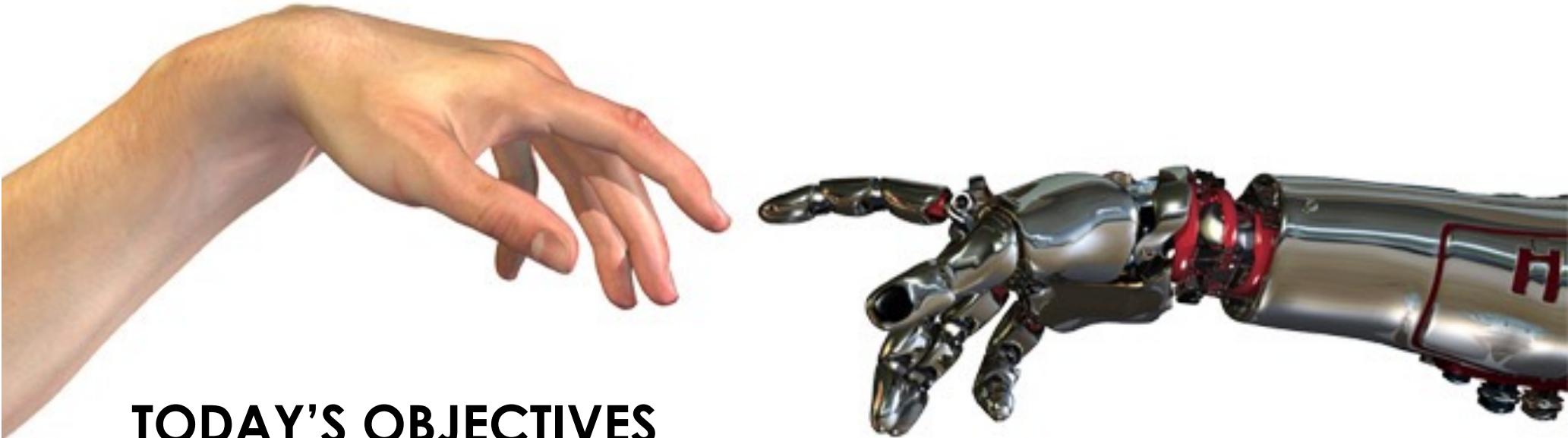


Human-Computer Interaction

Intro to HCI - Week 2



TODAY'S OBJECTIVES

- 1.) What is HCI?
- 2.) How is HCI different from UX (User Experience)?
- 3.) What's the career outlook if I am interested in HCI?
- 4.) What if I don't want a career in HCI, UX or anything of the like, how will this class help me in my CS career?



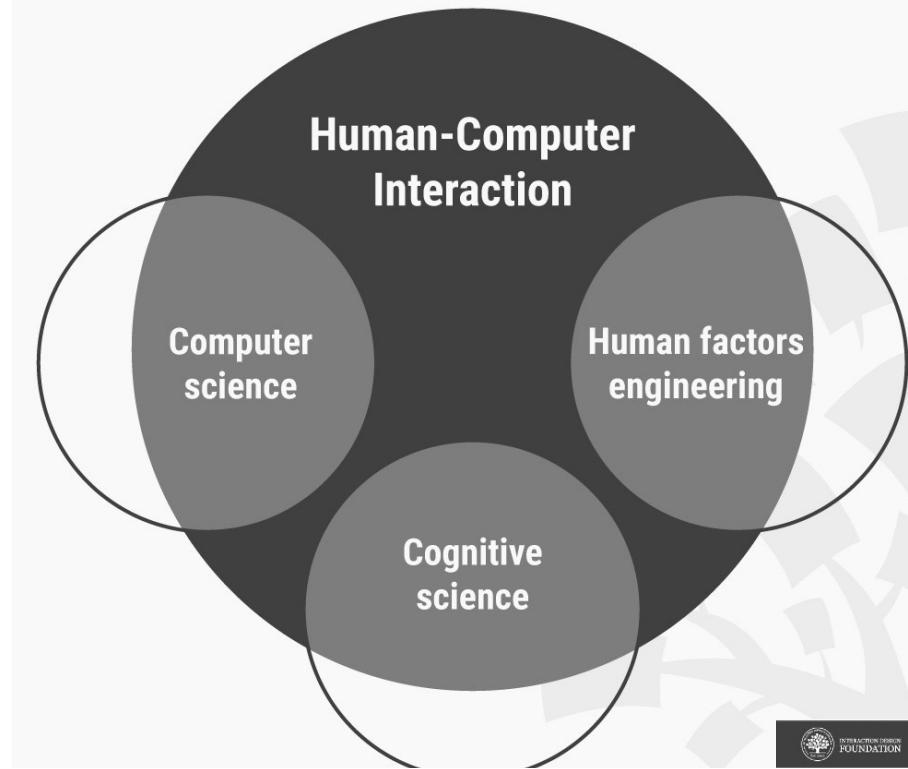
What is Human-Computer Interaction (HCI)?

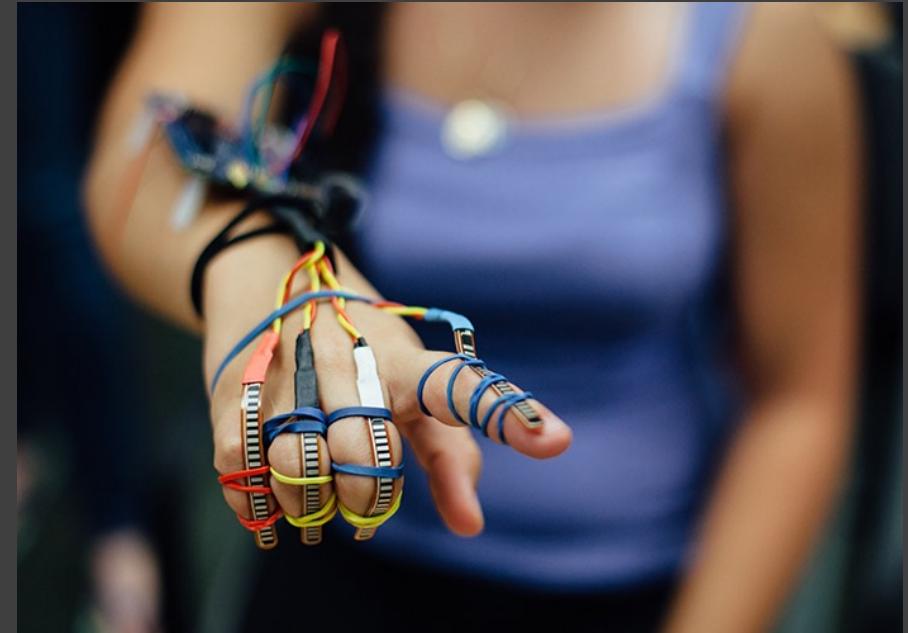
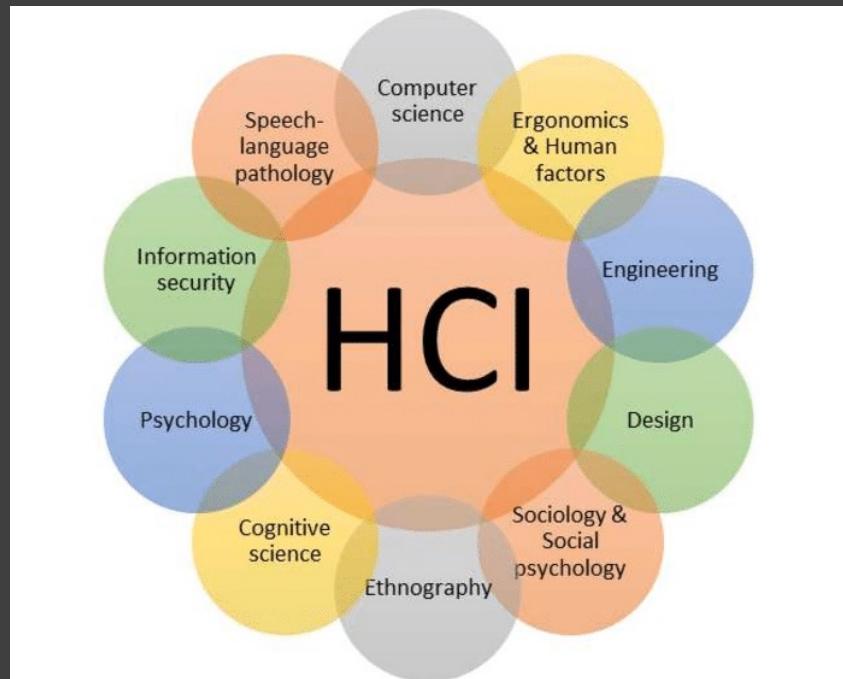
"According to [ACM's definition](#), HCI is a discipline that concerned with design, evaluation, and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them.

It researches the design and use of computer of technology, focusing on the interface between user and computer.

Researchers observe both the way in which human interact with computers and design technology that human interact in a novel way."

The Multidisciplinary Field of HCI





Relationship between
HCI, and other
fields—academic
disciplines

Academic disciplines contributing to HCI:

- Psychology
- Social Sciences
- Computing Sciences
- Engineering
- Ergonomics
- Informatics



How this class differs from the User Interface/User Experience (UX) Design course offering?

- Practitioners of **HCI** tend to be more academically focused.
 - They're involved in scientific research and developing (R&D) empirical understandings of users for their basis in design.
- Conversely, **UX** designers are almost invariably industry-focused and involved in designing products or services—e.g., smartphone apps and websites, based on fundamentals that have already been discovered through R&D from HCI practitioners.



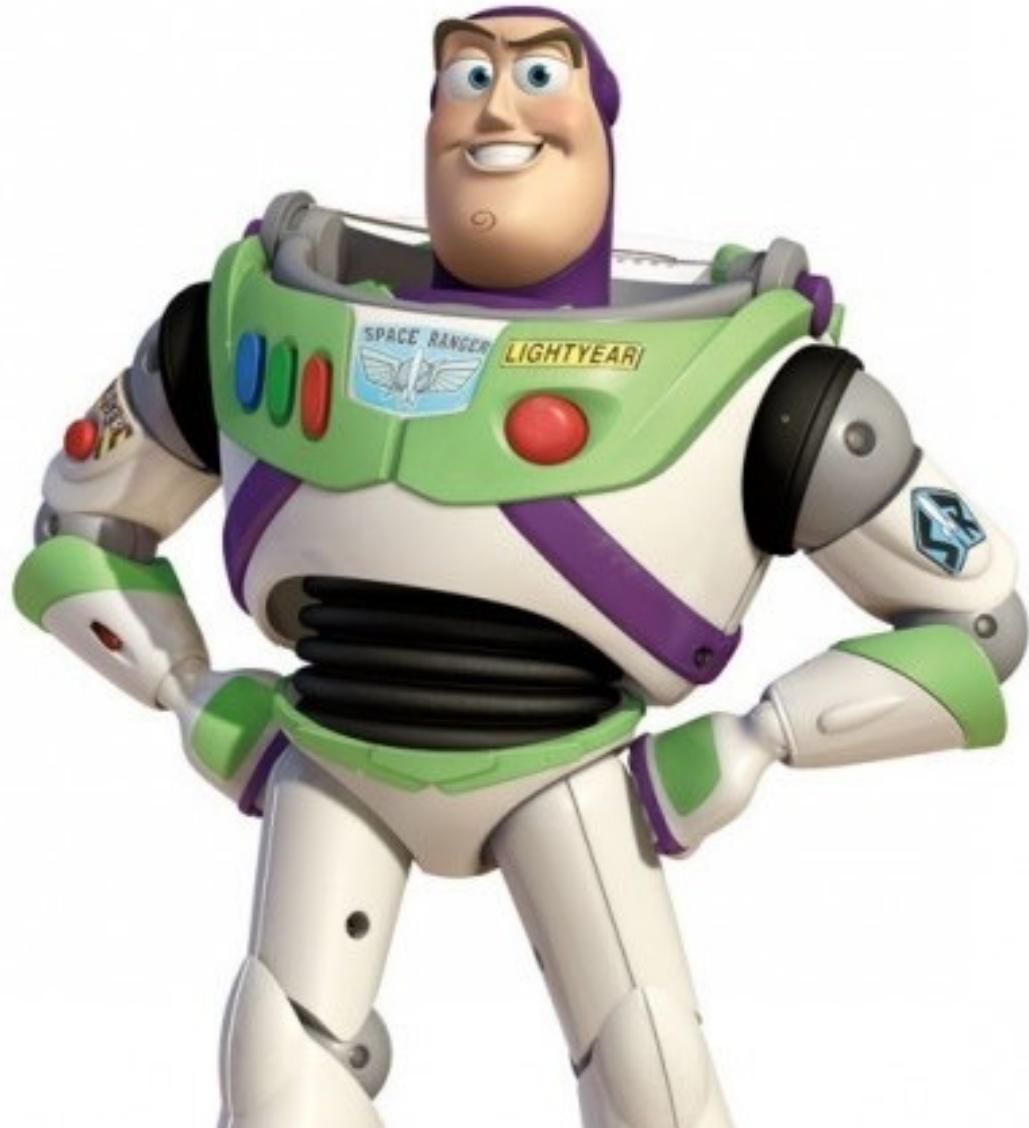
For those who don't want
a career in UX/HCI, this
class will (my hope)
change the way you
think about software
development/design!

- Goal: Not to provide you with a bunch of info within the HCI, rather to get you thinking about human-centered designs of everyday living!
-

- So, we will spend most of semester discussing the issue at hand and the subsequent **CRITICAL** need for human-centered computing designs.
 - That is, how can we design to capitalize on humans' physical and cognitive capabilities and limitations.
- *Therefore, much of what we talk about overlaps with UX and HCI!*
 - *This class builds on the UX course, great if you have that background but not a pre-req per se.*

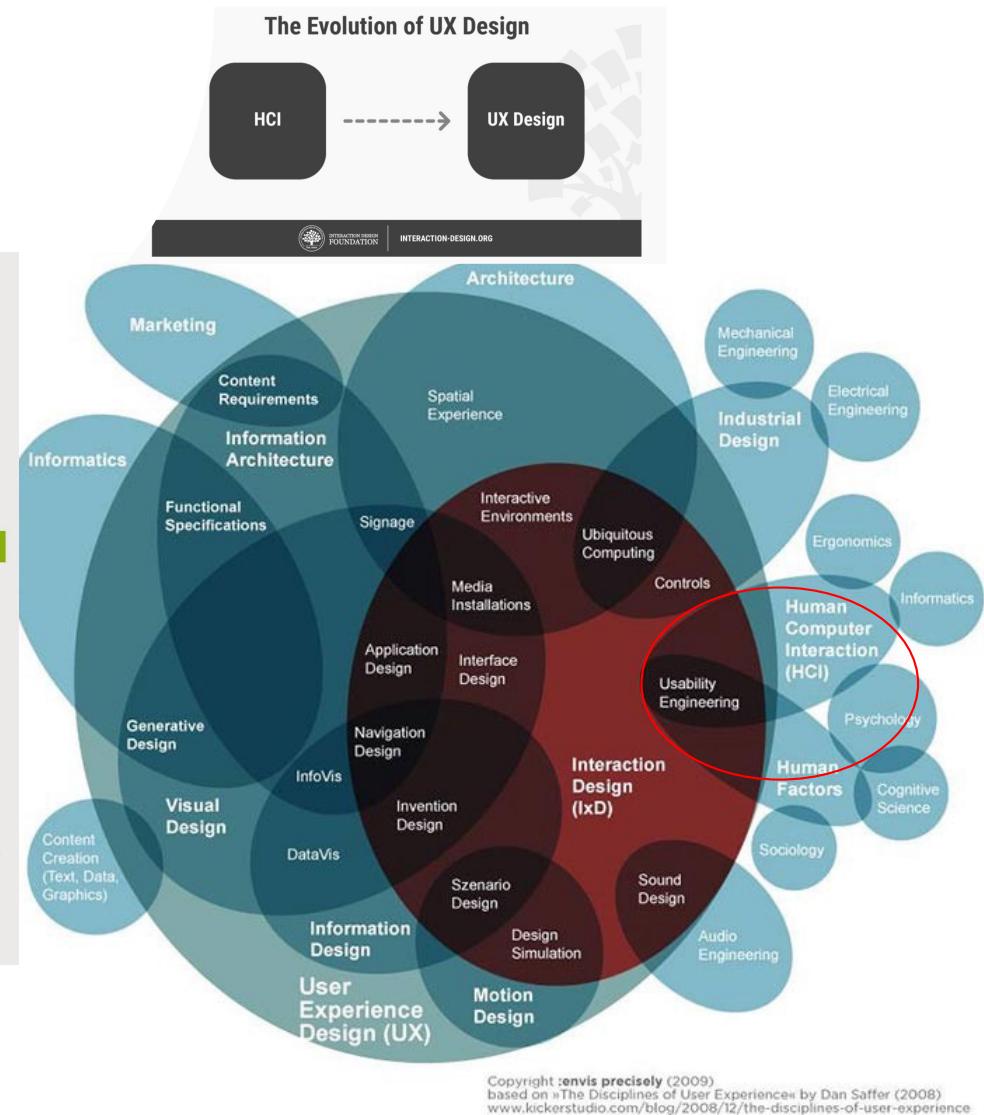
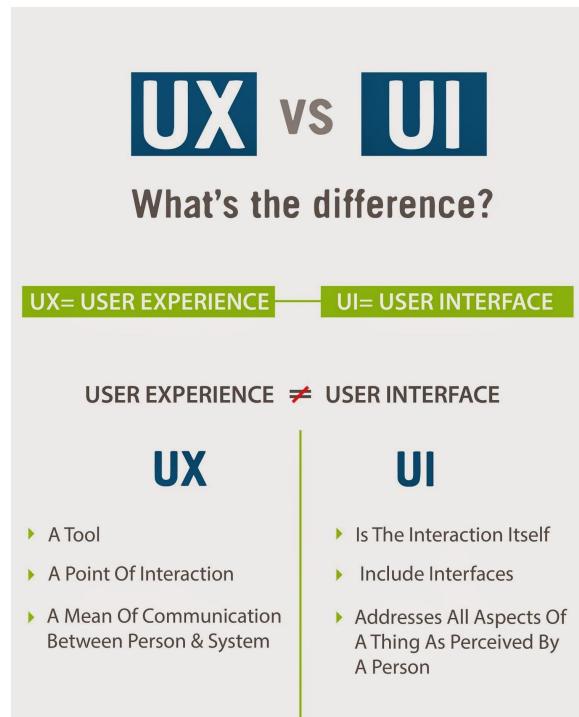
UX – A BUZZZZZ word

- A lot of designers are talking about **User Experience** (UX) these days.
- UX designers and researchers are suppose to *delight* our users, + provide users with *magic* = love our websites, apps and start-ups.
- User experience is a very blurry concept. Consequently, many people use the term incorrectly.



It all might sound confusing – UX (User Experience), UI (User Interface), Human Factors, HCI, Interaction Design.
- **because it is ;-)**

- because it is ;-)!





But not to worry!

Despite the semantics, the aim is to
remember the human is at the center of
your computational systems!

HCI requires - working in multidisciplinary teams

- Many people from different backgrounds involved
- Different perspectives and ways of seeing and talking about things

Benefits

- More ideas and designs generated

Disadvantages

- Difficult to communicate and progress forward the designs being created

Where can I work and how much \$\$ can I make at this gig (HCI specifically)?



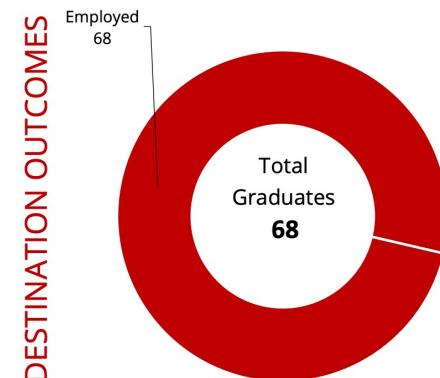
Careers In HCI

- Undergraduates get good jobs & job offers

Degree	Median salary offer
Bachelors, HCI	\$73,000
Computer	\$72,000
Psychology	\$40,000
Information Systems	\$58,600
Communication Design	\$32,000
Masters, HCI	\$83,000

2018 CMU FIRST DESTINATION OUTCOMES

School of Computer Science: Human Computer Interaction, MHCI



SALARIES

AVERAGE SALARY = \$96,809

MEDIAN SALARY = \$93,600

SALARY RANGE = \$50,000 – 160,000

35 salaries reported



Human-Computer Interaction Institute

- Many HCI and UX folks take both types of course and work in similar spaces.
- Degree Requirements:
 - UX Jobs require a BS in CS, Psychology, Engineering
 - HCI Jobs often require a MS in CS, Engineering, sometimes Psychology.

UX Designer Salary data + Growth

UX Designer Salary, by Experience

Experience	25th Quartile	Median	75th Quartile
9+ years	\$98,000	\$115,000	\$126,000
6 to 8 years	\$96,000	\$109,000	\$123,000
3 to 5 years	\$83,000	\$98,000	\$113,000
0 to 2 years	\$66,000	\$84,000	\$102,000

Source: Burning Glass

The median salary for a UX designer is \$98,485.

\$30-\$120/hr



Burning Glass also predicts that UX designer jobs will grow **14.9 percent** over the next 10 years, so it's not a dying profession by any stretch of the imagination. Source: <https://insights.dice.com/2020/08/10/ux-designer-salary-5-important-things-to-know/>

Latest Search “Human Computer Interaction Jobs” via Google

- **NOTE! We have an identity crisis ;-)**
- Often you will see HCI mixed with User Interaction, User Experience (UX), User Research. These are truly all fundamentally different occupations.
- If you have taken courses in both, then that certainly helps land that UX/UI, HCI job you are looking for.
 - As much of the skills and knowledge do overlap and are certainly transferable.

human computer interaction jobs
Bozeman, MT

Jobs Saved Alerts

Employer

Research associate Engineer Experience designer Research scientist Ux researcher Research analyst

Research Intern, Human-Computer Interaction

Oculus Rift
Redmond, WA

Apply on Talent.com

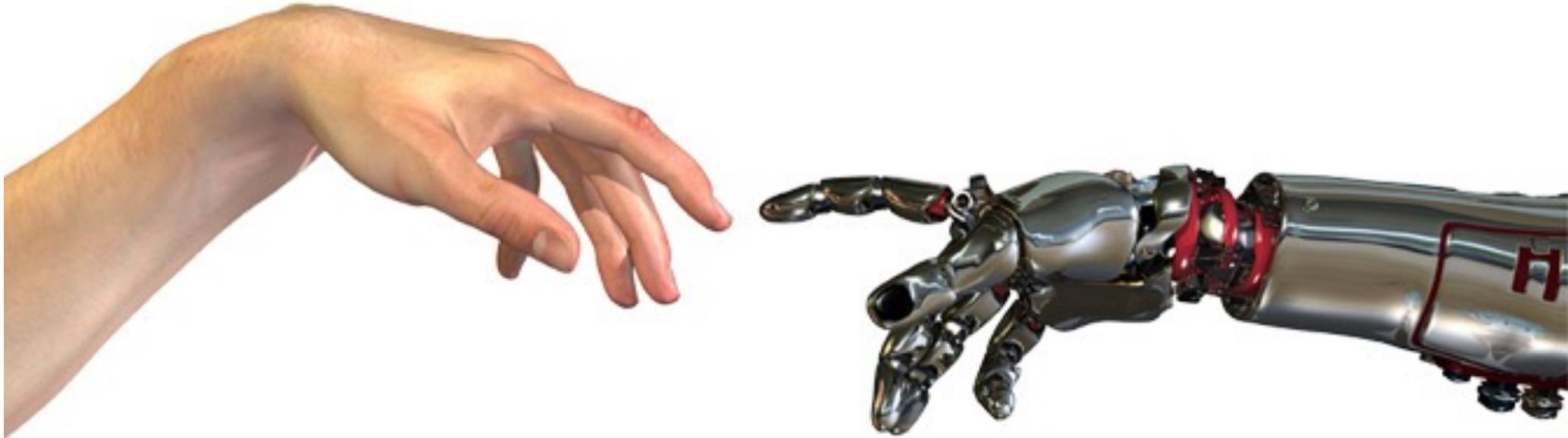
Over 1 month ago Full-time

At Facebook Reality Labs, our goal is to invent the user interface technologies that will drive the next generation of...
is to unleash human potential by erasing the bottlenecks between intent and action. As a Research Intern, you will fo...
and interfaces for augmented reality glasses. Your work would involve developing novel input techniques for compl...
intent, designing interfaces for system uncertainty disambiguation, and/or personalizing the system based on user...
research lies at the intersection of cognitive science, machine learning, and human-computer interaction. You will w...
mentors in the AR/VR, machine learning, neuroscience, and HCI fields. ResponsibilitiesPlan and execute cutting-edg...
interactions, modeling interaction intent, designing adaptive interfaces, and/or...

READ MORE

Report this listing

Human Computer Interaction, Defining the HCI Experience- Week 2



TODAY'S OBJECTIVES

- 1.) What is design and what is not?
- 2.) Hassenzahl's Model of User Experience
- 3.) Why we can't design the experience and what we can do instead!



Let's Discuss User Experience/HCI Design Thinking ...

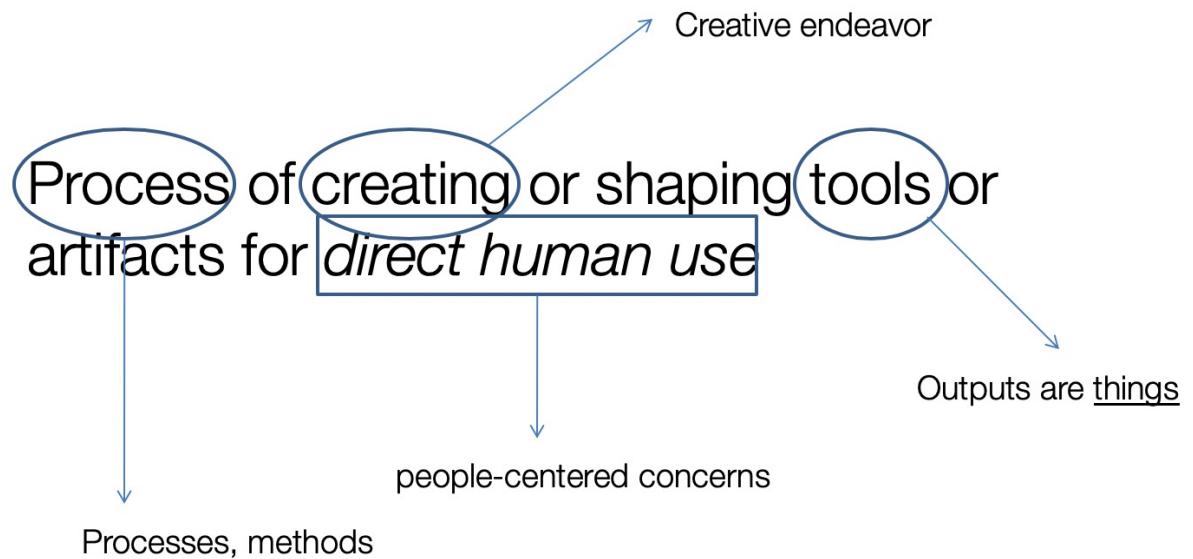


User Experience Honeycomb

<http://semanticstudios.com/>

What is Design?

(A refresher for some,
and new for others)



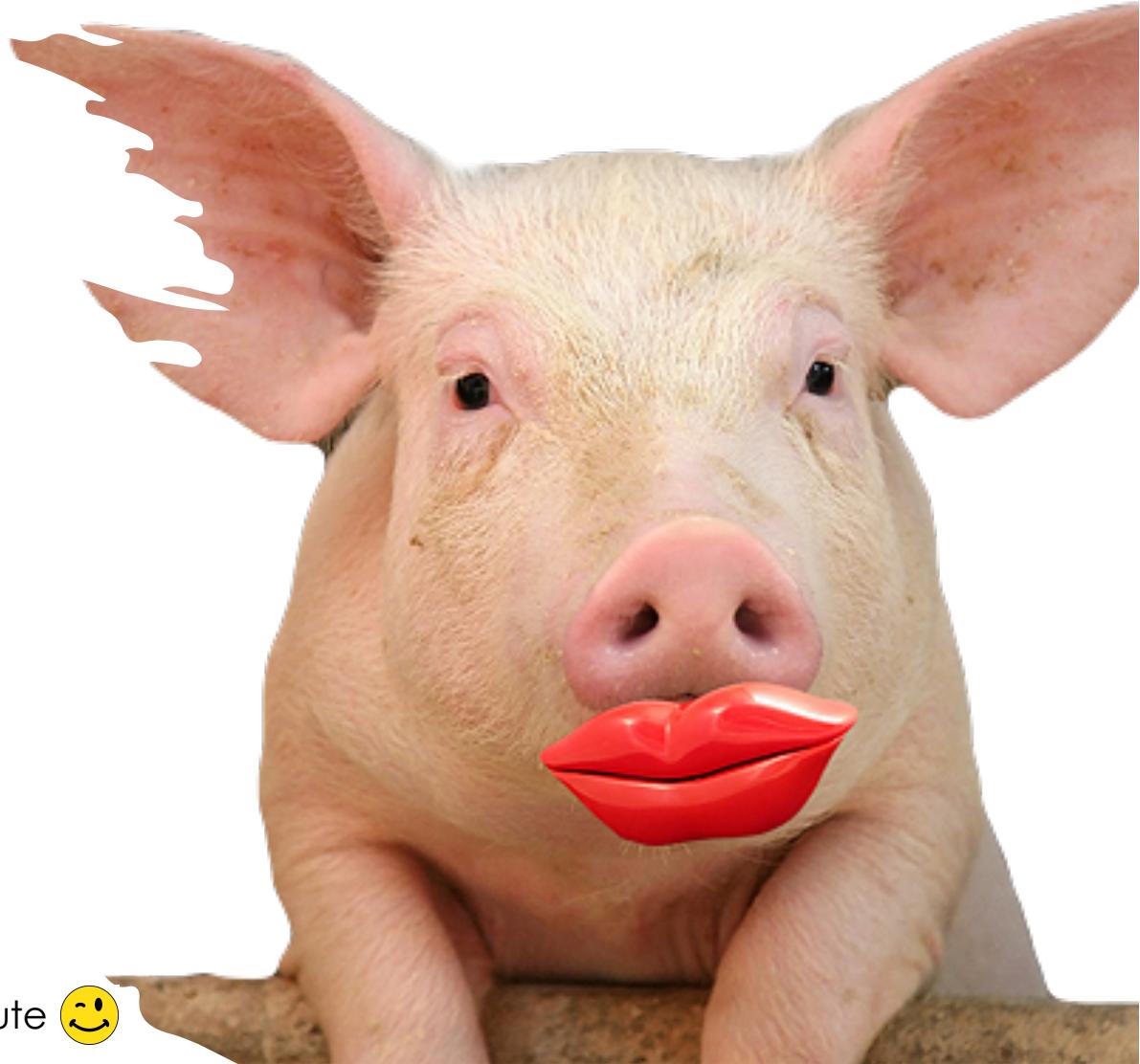
Design is Not Just “Lipstick on a Pig”

Not just changing how things look

Or making things pretty

Or designing graphics

Though he's pretty cute 😊





HUH?



User Experience
Cannot Be
Designed

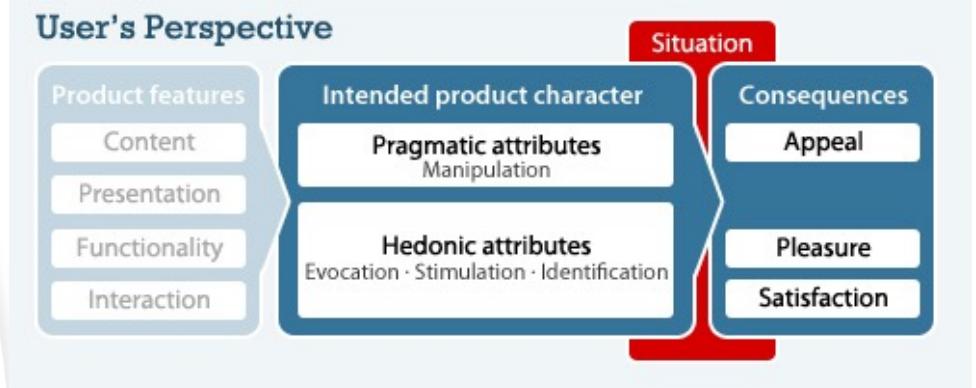
Defining user experience using a research-based model...

How users perceive a product, such as whether a smartwatch is seen as sleek or chunky, and their emotional reaction to it, such as whether people have a positive experience when using it.

(Hornbæk and Hertzum, 2017)

Hassenzahl's (2010) Model of the user experience

1. Pragmatic: how simple, practical, and obvious it is for the user to achieve their goals
2. Hedonic: how evocative and stimulating the interaction is to users



Hassenzahl's Model

- Manipulation
 - Hassenzahl explains the hedonic and pragmatic qualities with a hammer metaphor.
 - The pragmatic qualities are the function and a way for us to use that function.
 - However, hammers can also have hedonic qualities; e.g., if it is used to communicate professionalism or to elicit memories.



(Image: [Velo Steve](#))

Hassenzahl's Model

- *Identification*
 - Although manipulation is important, a product can have other functions as well.
 - Many of the items connected to you right now (say oh Twitter, SnapChat, FB) could probably be used to get an idea of who you are and what you care about,
 - The secondary function of an object is to communicate your identity to others. Therefore, to fulfill this function, objects need to enable users to **express themselves**.

Express Yourself through Facebook reactions



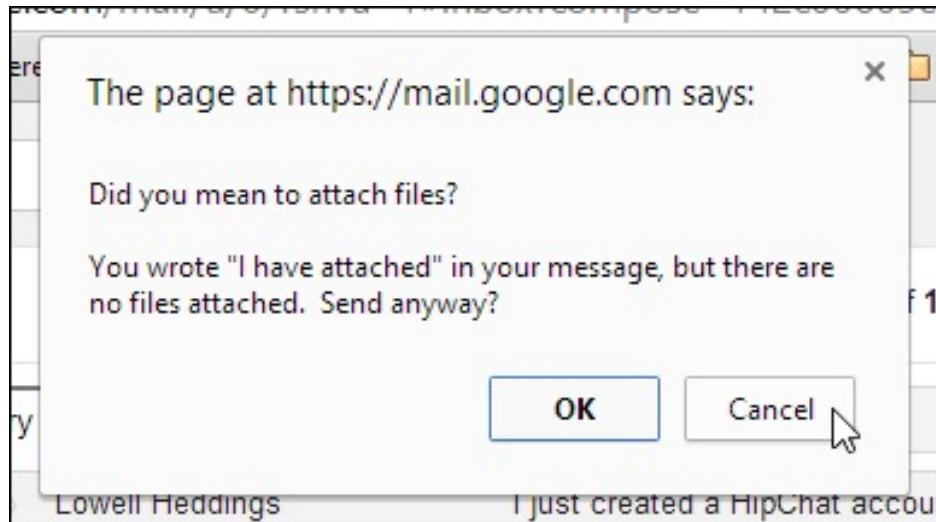
#APPTUSE



Hassenzahl's Model

- *Stimulation*

- Pareto Principle and fighting for inclusion
- This is necessarily not the case with UX, because rarely used functions can fill a hedonic function called stimulation.
- Rarely used functions can **stimulate the user and satisfy** the human urge for personal development and more skills.



Pareto Principle

- 80% of work productivity comes from 20% of the time you put in
- 80% of errors are caused by 20% of code
- 80% of revenue comes from 20% of customers
- 80% of sales come from 20% of sales staff
- 80% of attention is spent on 20% of the web page

Hassenzahl's Model

Evocation

- Recalling the past through memory.
- In design, we can certainly give a website a vintage look and feel to remind us of our childhood, high school or the '60s... or the '30s. But even websites with a modern and minimalist design can have evocative attributes.
 - Ex. Facebook provides you with a huge number of pictures from the past, some of which are highly evocative.

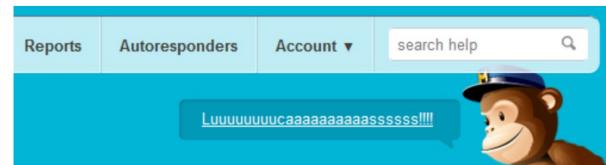


Souvenirs tend to have weak manipulative qualities, but they can be evocative when they elicit memories. (Image: [meddygarnet](#))

SO, YOU MIGHT BE ASKING, NOW, WHY CAN'T UX BE DESIGNED?

Because UX depends not only on the product itself, but on the user and the situation in which they use the product.

-
-
-
-



The MailChimp monkey's words will probably appeal to some users more than others.

You cannot design the situation
You cannot design the user

Can't design the user

- Users are different w/different expectations.



Can't design the situation

- Design depends on the context in which the product is used.
- It can determine why a product is used and can shape a user's expectations.





Are roller coasters fun, thrilling and exciting or just breathtakingly scary? It's up to you!

(Image: [foilman](#))

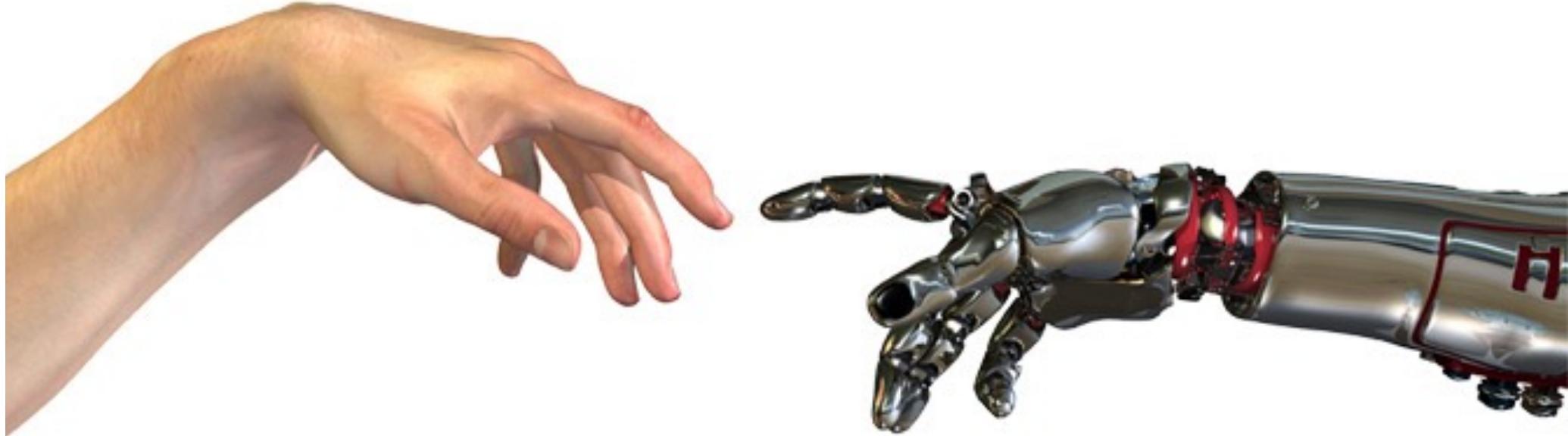
We can design for user experience and rely on HCI fundamentals to do so!

What we can do ...

User Experience is the sum of certain factors, such as fun, emotion, usability, motivation, co-experience, user involvement and user engagement.

Human-Computer Interaction, CSCI 494/595 Spring 2021

Intro to Human Factors - Week 3 Lecture 1 of 2



TODAY'S OBJECTIVES

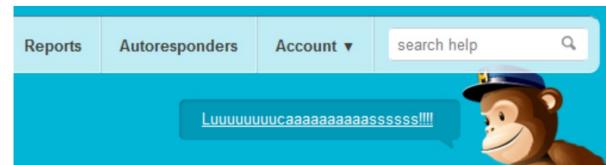
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In practice...

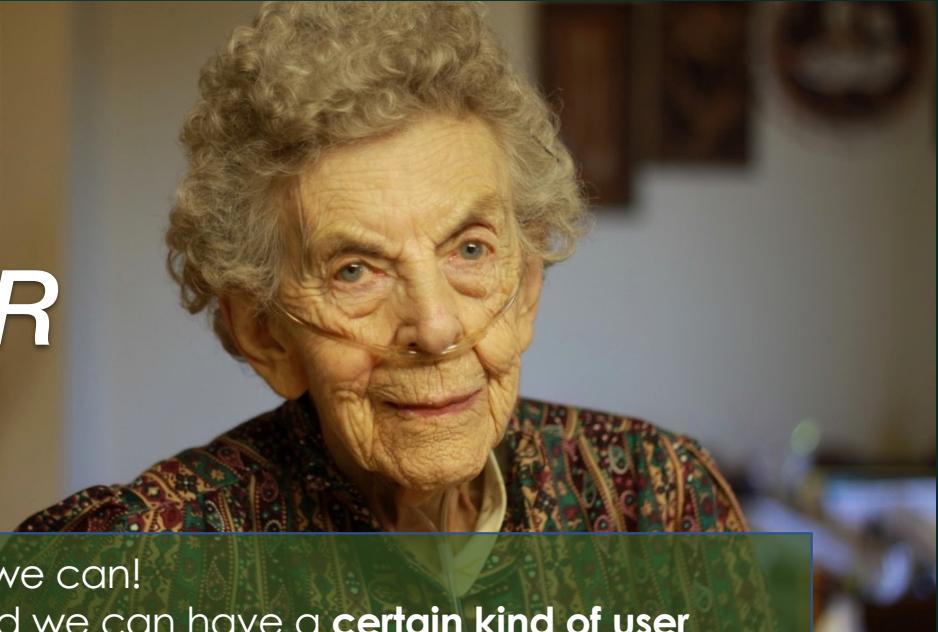
Who knows more about the healthcare needs of the elderly?

Remember:

- You cannot design the situation
- You cannot design the user
- We can shape neither our users' expectations nor the situation in which they use what we have designed.



OR



But we can!

Design the product or service, and we can have a certain kind of user experience in mind when we design it. And we can measure that experience in systematic manner to make it better one.

A black and white photograph of a man riding a motorcycle. He is wearing a light-colored t-shirt, dark pants, and a cap. He is looking back over his shoulder. The motorcycle has a license plate that reads "AX-100". The background consists of a field of tall, dense grass under a cloudy sky.

What people say and
what people do
aren't necessarily ***the***
same thing. And this
is why we rely on HCI
methods!

What someone
says they think,
feel, and do...

Discovered through
interviews, focus groups,
surveys, etc.

What someone
actually does...

Discovered through
observation and immersion in
real life contexts

What someone
really thinks and
feels...

Discovered through
meaningful human
connections, conversation,
and immersion

HCI Techniques

Quantitative

- Used to identify and measure patterns in thinking and behavior among users.
- **EXAMPLES**
 - Performance (UX folks use predominately)
 - (# errors, number of clicks, time spent on task, etc.)
 - Data Mining
 - Machine Learning/Affective Computing Practices to Classify Emotions

UX relies on these **QUALITATIVE** techniques predominately

- Used to gather deeper information on individual's thinking, feeling and motivations.

- **EXAMPLES**
 - Interviews
 - Surveys
 - Focus Groups