



Lecture 1

Introduction to Human-Computer Interaction

COMP 3008: Human-Computer Interaction

Dr. Nadine Moacdieh

September 7, 2022



Admin issues

- **Brightspace** active – make sure you have access
- Read the **course outline** and ask if you have any questions!

"Admin issues" slide
will summarize key
tasks and deadlines

Instructor info



Email

nadine.moacdieh@carleton.ca

Office

HP 5135

Office hours

- MW 10:30-11:30
- In-person or Zoom

Passionate about

- Designing intelligent displays
- Clutter and data overload
- Eye tracking
- Soccer

Teaching assistants

Paola Chaves
Marmorato

Email

paolachavesmarmorato@cmail.carleton.ca

Office hours

Monday 2 pm

Manya
Kakkar

Email

manyakkakkar@cmail.carleton.ca

Office hours

Tuesday 11 am

Maxwell
Keleher

Email

maxwellkeleher@cmail.carleton.ca

Office hours

Tuesday 10 am

Ruchi Swami

Email

ruchiswami@cmail.carleton.ca

Office hours

Thursday 12 pm

Office hours schedule

	Monday	Tuesday	Wednesday	Thursday	Friday
8:30 am					
9:00 am					
9:30 am					
10:00 am		Maxwell Keleher			
10:30 am	Nadine Moacdieh		Nadine Moacdieh		
11:00 am		Manya Kakkar			
11:30 am					
12:00 pm				Ruchi Swami	
12:30 pm					
1:00 pm					
1:30 pm					
2:00 pm	Paola Chaves Marmorato				
2:30 pm					
3:00 pm					
3:30 pm					
4:00 pm					
4:30 pm					
5:00 pm					

See the "Office Hours" document in Brightspace for full details

Communication

Brightspace
forums

For questions about
assignments, course
policies, and lecture
material

Office
hours

For in-depth
discussions, further
insight, and support

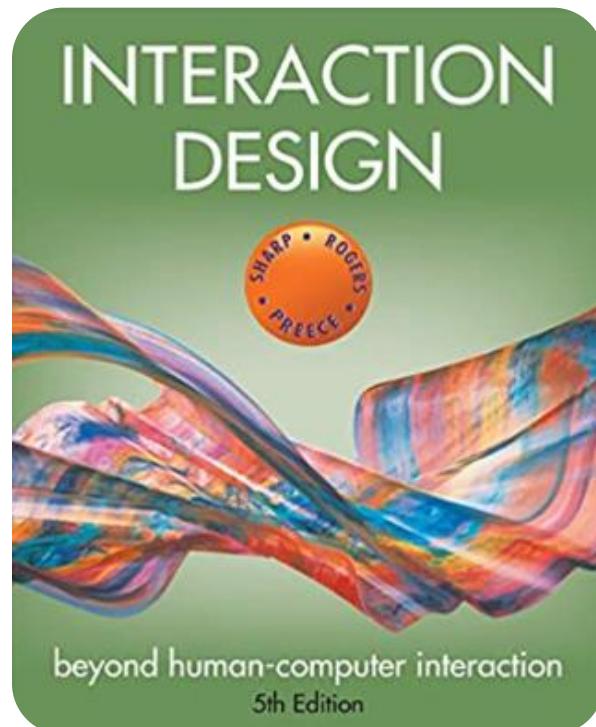
Never hesitate
to get in touch!

Email

For personal issues,
deferrals,
appointments,
grade inquiries

Course materials

- **Course textbook:** Interaction Design: Beyond Human-Computer Interaction (5th edition) by Sharp, Rogers, and Preece.



- Chapters covered will be pointed out
- You are not responsible for what is not covered in class

Course materials

- **Course lectures and assignments** will be posted to Brightspace

Preliminary lectures
posted before class



Full lectures
posted after class

Will just be missing a few details that will be discussed in class

Course grading

Component	Percent	Details
Assignments	40%	<ul style="list-style-type: none">• Four individual assignments, all on Brightspace• One late assignment accepted (up to a week)



Wednesday,
September 21



Wednesday,
October 5



Wednesday,
October 19



Wednesday,
November 16

Course grading

Component	Percent	Details
Assignments	40%	<ul style="list-style-type: none">• Four individual assignments, all on Brightspace• One late assignment accepted (up to a week)
Midterm	30%	<ul style="list-style-type: none">• Open book and notes• During class time

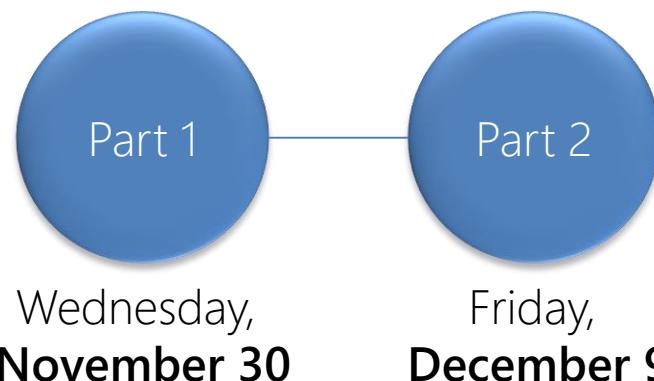


Wednesday,
November 2

Course grading

Check course outline
for full grading,
deferral, and academic
integrity policies

Component	Percent	Details
Assignments	40%	<ul style="list-style-type: none">Four individual assignments, all on BrightspaceOne late assignment accepted (up to a week)
Midterm	30%	<ul style="list-style-type: none">Open book and notesDuring class time
Project	30%	<ul style="list-style-type: none">Two components: recorded presentation (15%) and report (15%)Can be done individually or in groups of 2 or 3



Course grading

- **No attendance** grade
- Can collect up to 3% through **class participation**
 - Log in with MC1 credentials
 - Six participation instances needed for full bonus

pollEv.com/nadinemoa

Course outline and objectives

Introduction
and basic
concepts

Human
cognition
and behavior

Understand
the user

Interface
design

Test and
evaluate

Research
trends

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- Explain the importance of **usability**
- Describe **user-centered design** and other design terms

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- Describe different types of **human cognition**
- Identify the types of **errors** that people can make
- Use different types of **cognitive frameworks**

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- Use **interviews, surveys, task analysis**, and **personas**
- Perform **qualitative data analysis**

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- Create **conceptual models** and **prototypes**
- Use interface **design principles**
- Understand **ethics** in the design process

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- Conduct **usability testing**
- Design a **usability experiment**
- Carry out **statistical analysis**

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- Other topics
and directions
in HCI

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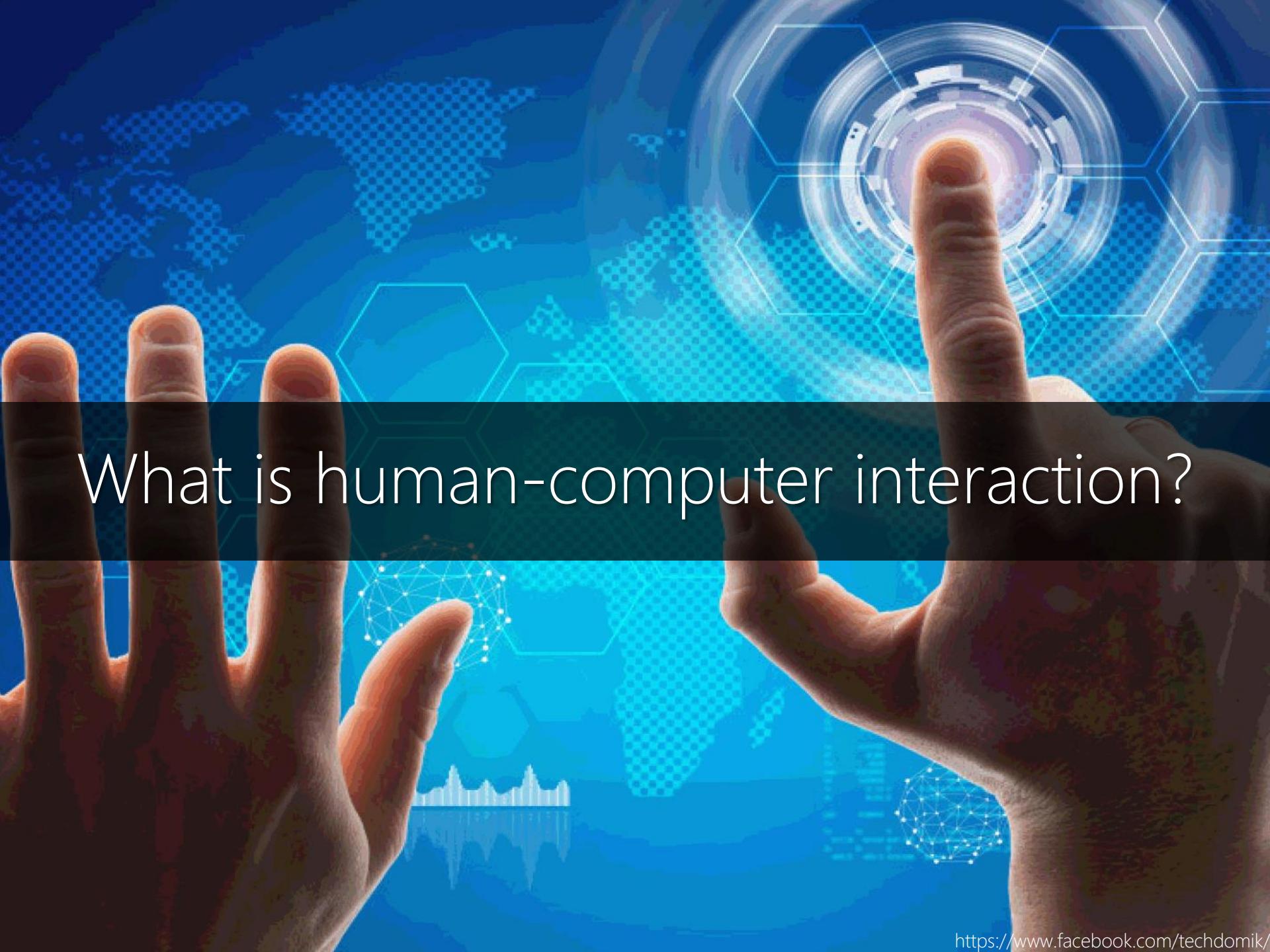
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Research
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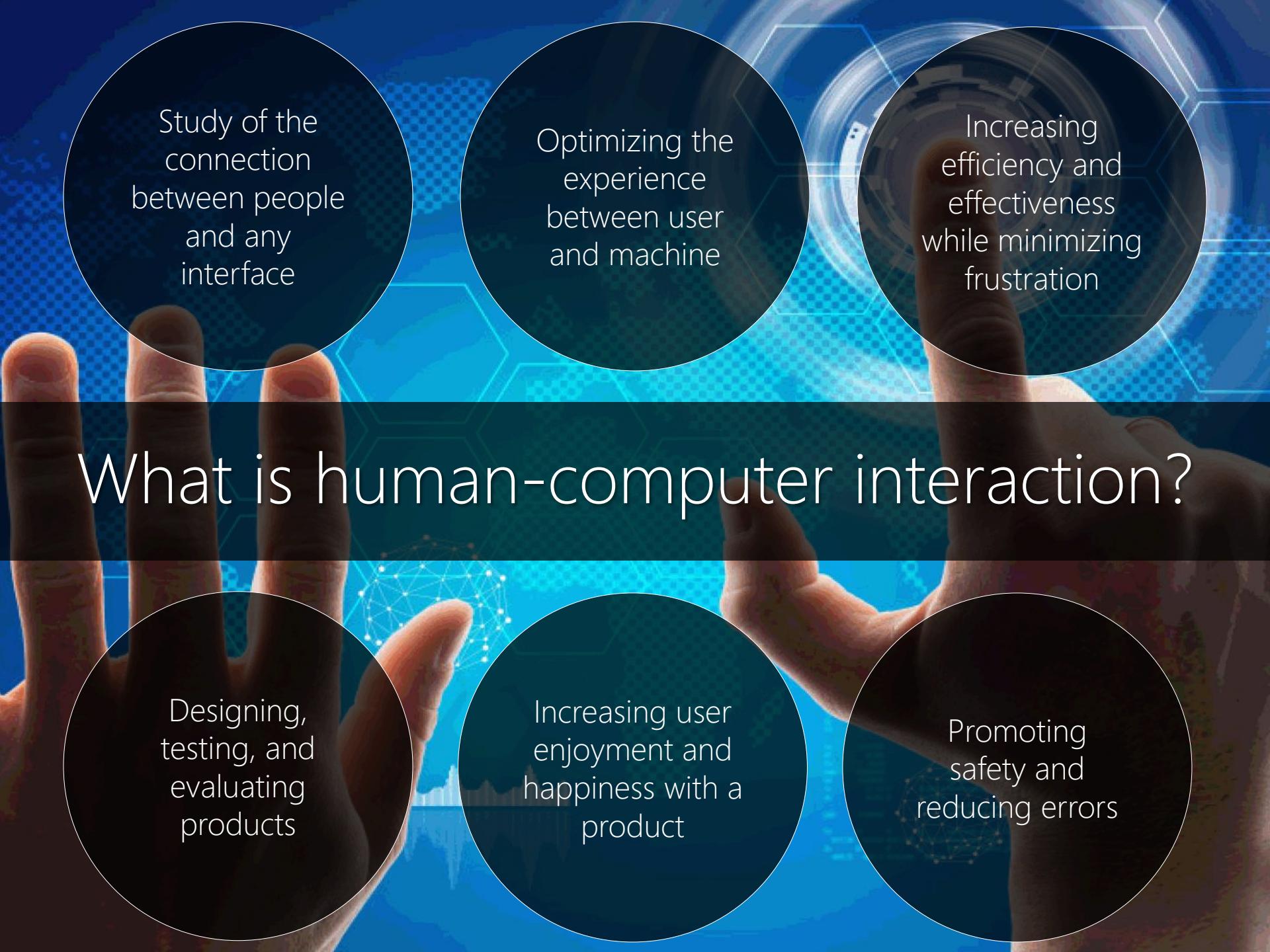
Main objectives of this lecture:

- Get an overview of COMP 3008
- Get an overview of the field of HCI

Watch out for this
slide at the start of
each lecture



What is human-computer interaction?



A background image of a person's hands interacting with a digital screen, set against a blue hexagonal grid pattern.

Study of the connection between people and any interface

Optimizing the experience between user and machine

Increasing efficiency and effectiveness while minimizing frustration

What is human-computer interaction?



A background image of a person's hands interacting with a digital screen, set against a blue hexagonal grid pattern.

Designing, testing, and evaluating products

Increasing user enjoyment and happiness with a product

Promoting safety and reducing errors



Human-computer interaction is a discipline concerned with the **design, evaluation and implementation** of interactive computing systems for human use and with the study of major phenomena surrounding them (ACM)

Human



Computer

How to optimize
the bridge
between human
and machine to
provide the best
experience
possible

Processing

Machine/computer interfaces

- Examples in daily life



Phone



Computer



TV



Microwave



Car



Parking meter

Machine/computer interfaces

- Examples in complex domains



Aviation



Process control



Space travel



Medicine



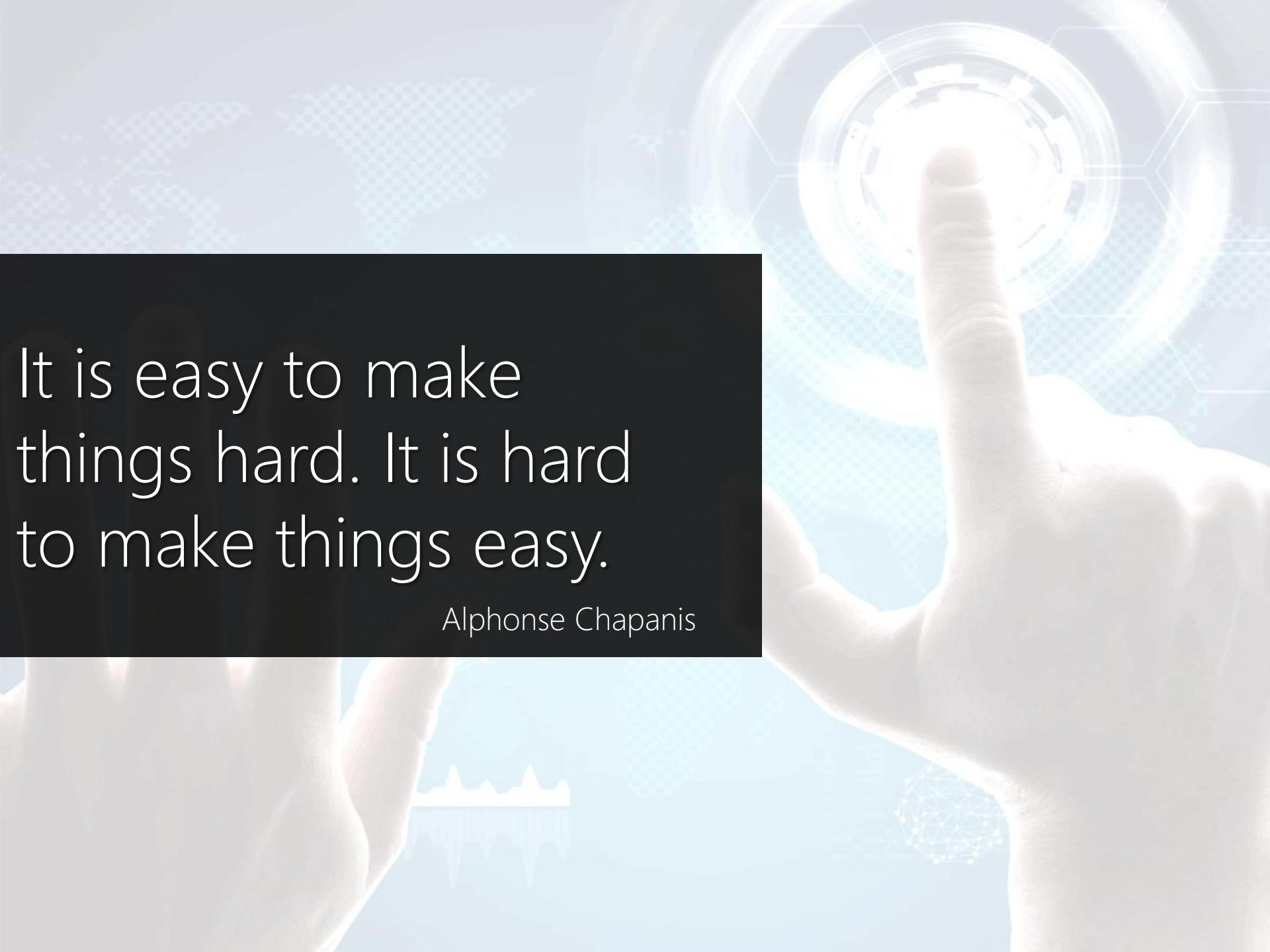
Emergency
services



Military

<https://www.quora.com/Which-aircraft-has-or-had-the-most-complex-and-function-filled-cockpit-ever>

<https://www.youtube.com/watch?v=u19mQlQeMmE>

The background of the slide features a hand pointing towards a futuristic digital interface. The interface includes a large circular element resembling a gear or a dial, and a smaller circular element with a network or brain-like pattern. The overall aesthetic is light blue and white.

It is easy to make
things hard. It is hard
to make things easy.

Alphonse Chapanis

History of HCI



Abacus

Ancient times

History of HCI

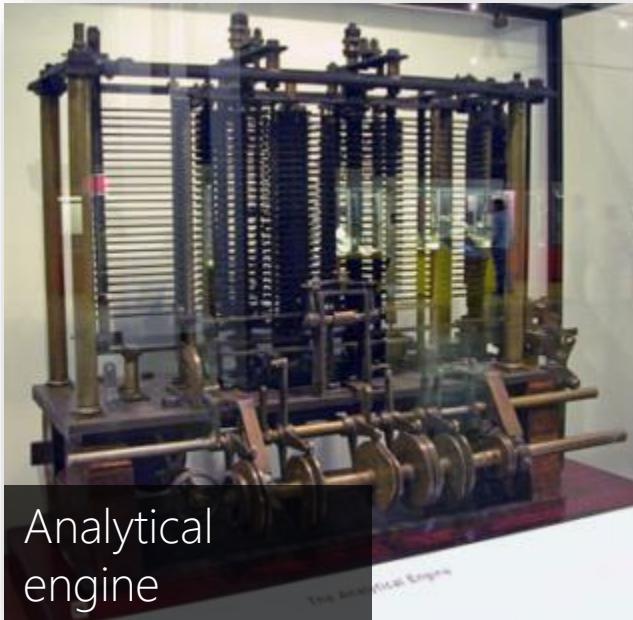


Slide rule



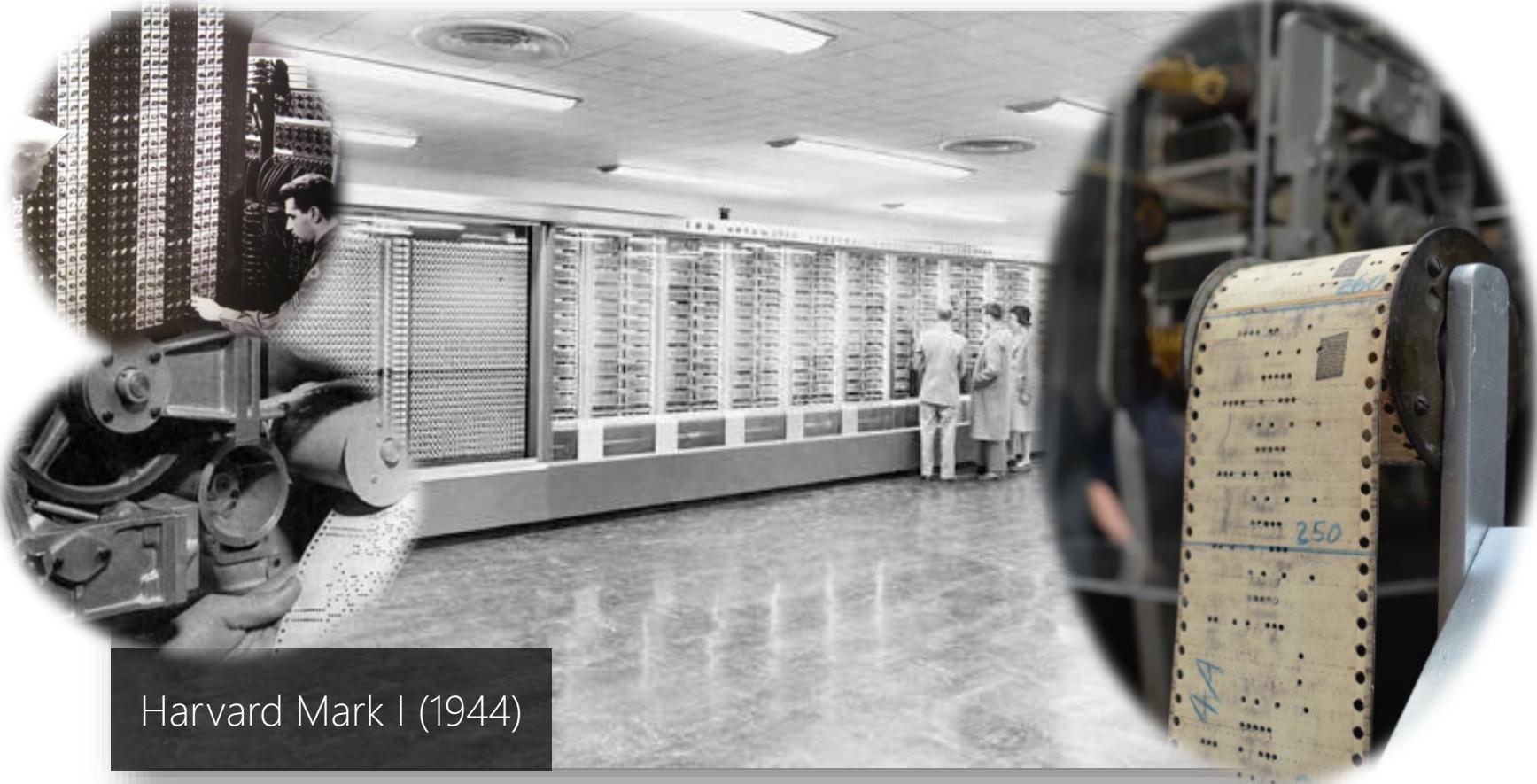
17th century

History of HCI



19th century

History of HCI



Harvard Mark I (1944)

1940's

1950's

1960's

1970's

1980's

1990's

2000s+

History of HCI



IBM 650

1940's

1950's

1960's

1970's

1980's

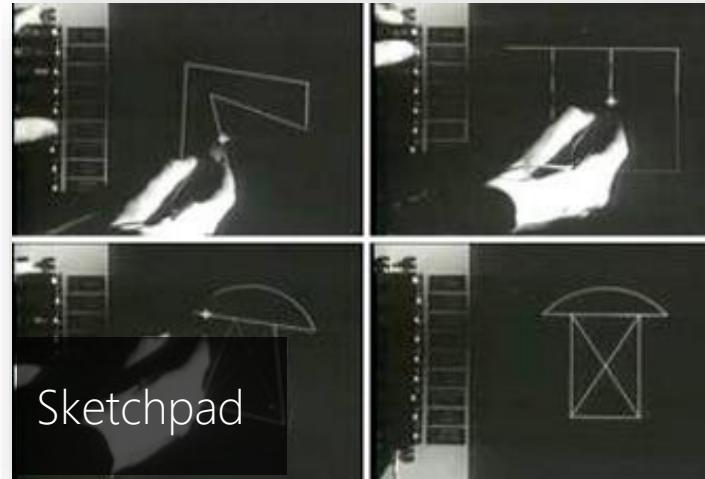
1990's

2000s+

History of HCI



Engelbart's mouse



Sketchpad

1940's

1950's

1960's

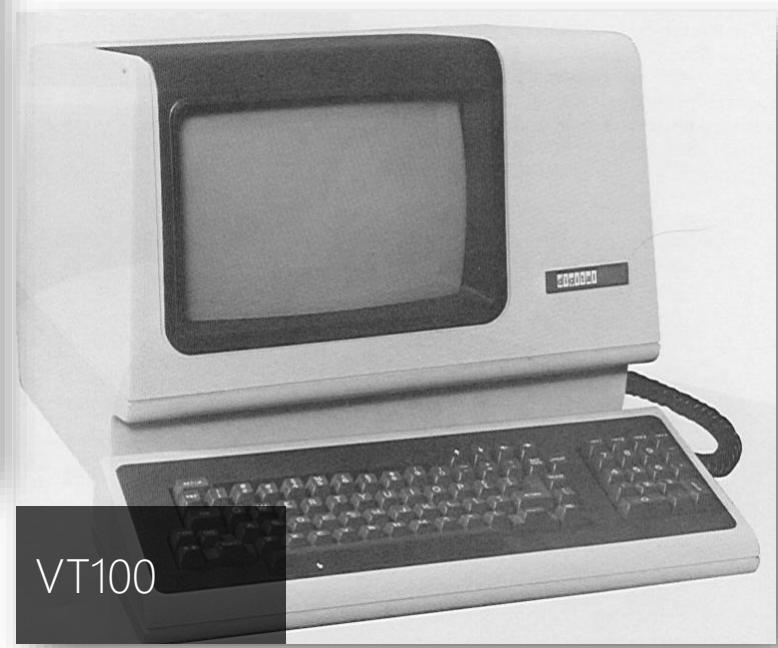
1970's

1980's

1990's

2000s+

History of HCI



1940's

1950's

1960's

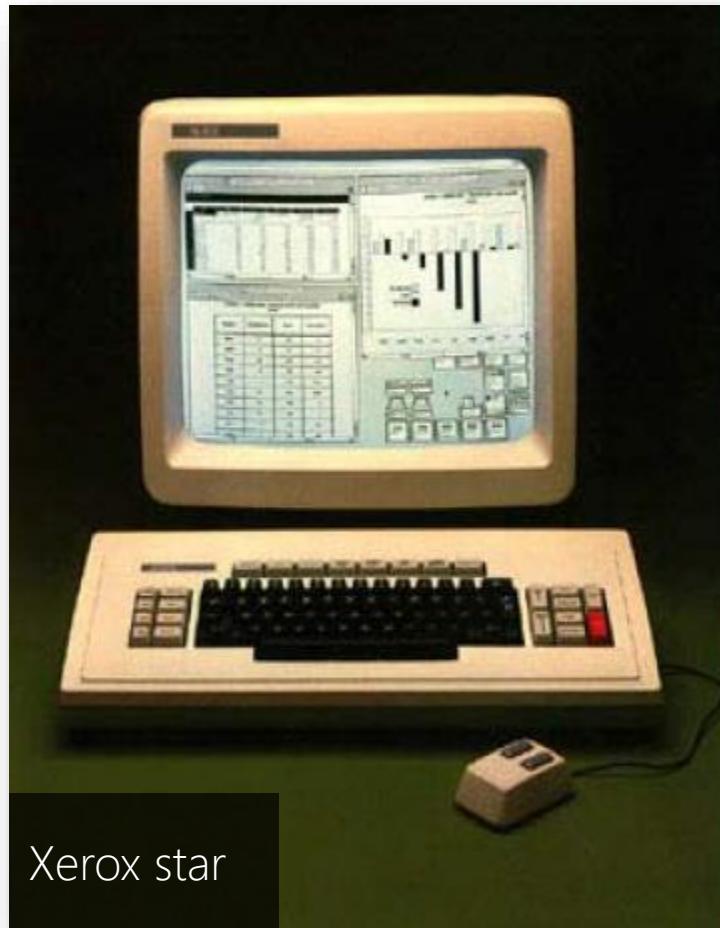
1970's

1980's

1990's

2000s+

History of HCI



Xerox star

1940's

1950's

1960's

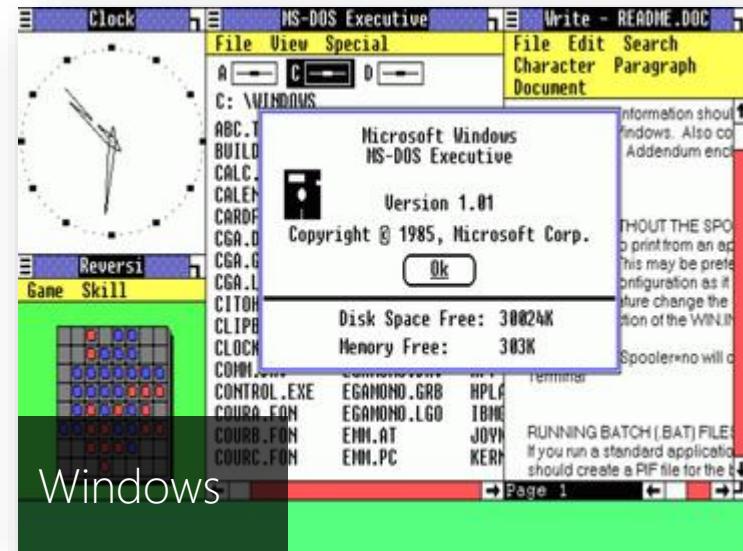
1970's

1980's

1990's

2000s+

History of HCI



1940's

1950's

1960's

1970's

1980's

1990's

2000s+

History of HCI



1940's

1950's

1960's

1970's

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History of HCI



Laptops



Smartphones



Gesture
recognition

1940's

1950's

1960's

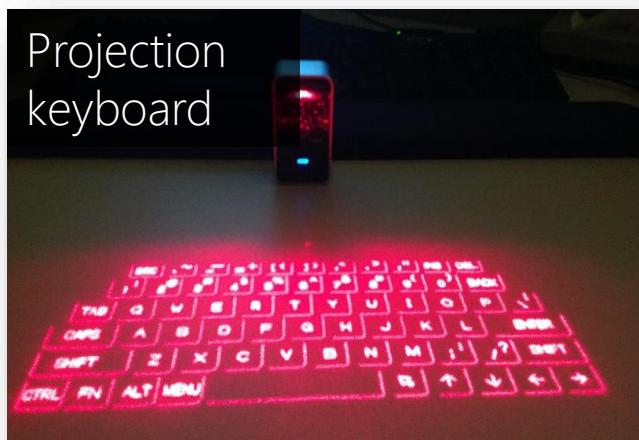
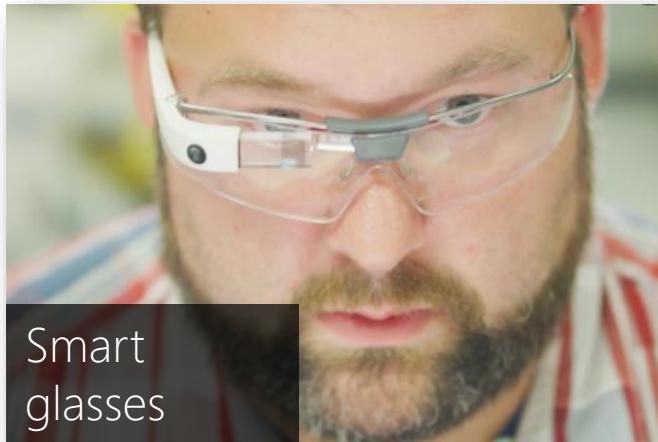
1970's

1980's

1990's

2000s+

History of HCI



1940's

1950's

1960's

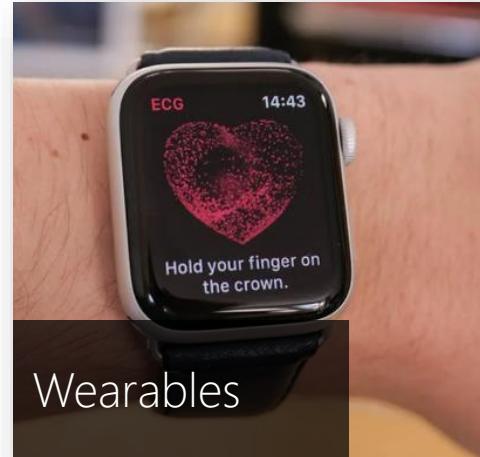
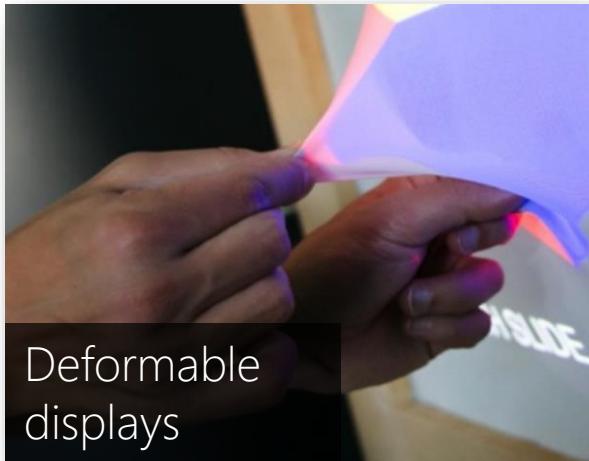
1970's

1980's

1990's

2000s+

History of HCI



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History of HCI



Where do HCI professionals work?

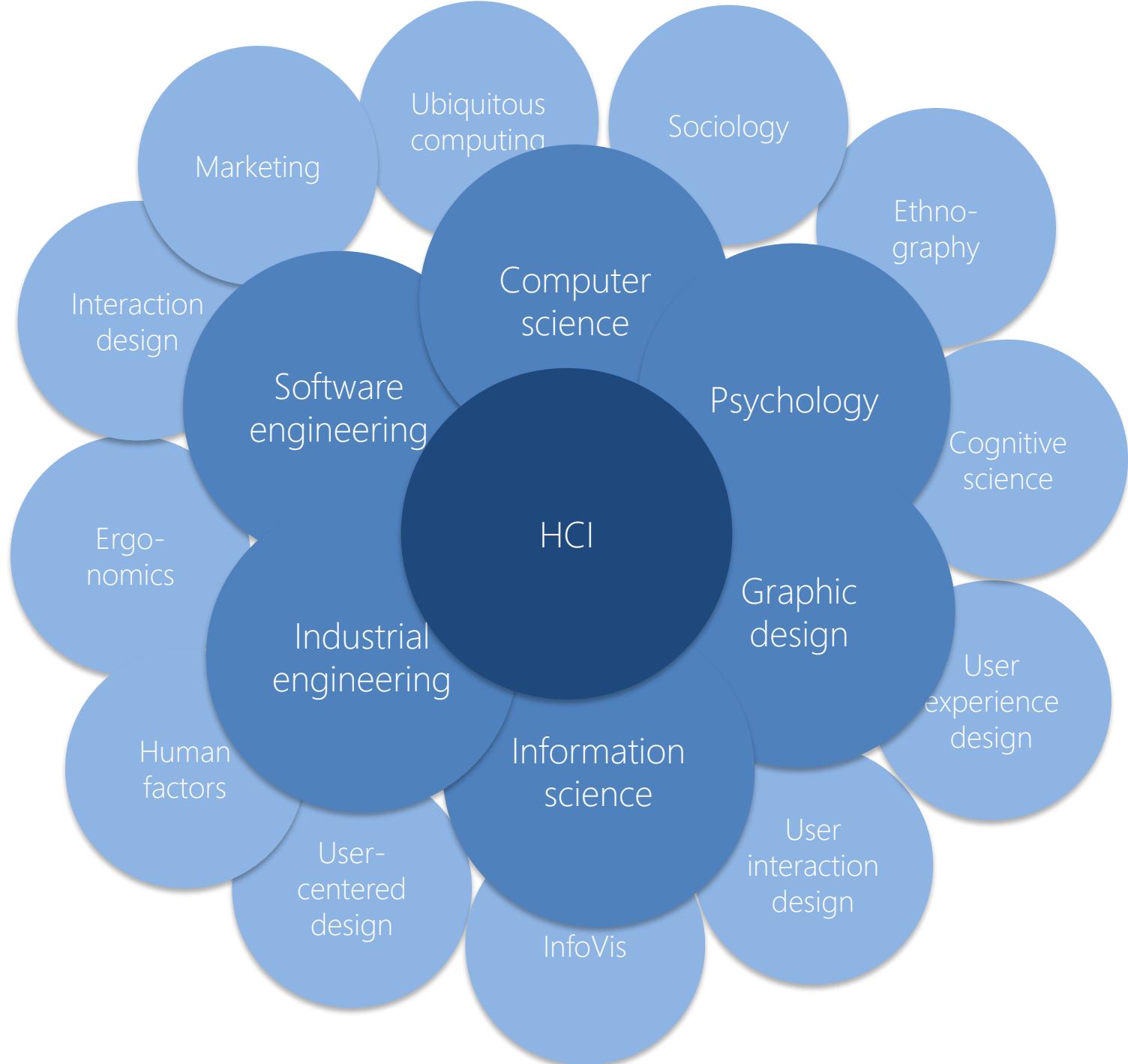


BANG & OLUFSEN



Where do HCI researchers publish?

- Major conferences/journals in the field:
 - **CHI** (ACM Conference on Human Factors in Computing Systems)
 - **HFES** (Human Factors and Ergonomics Society)
 - **INTERACT**
 - **Ubicomp**
 - IEEE Transactions on **Affective Computing**
 - ACM/IEEE International Conference on **Human Robot Interaction**
 - IEEE Transactions on **Human-Machine Systems**



Related terms

- **(User) interaction design:** designing interactive products to support the way people communicate and interact in their everyday and working lives

Seen as broader
than HCI



Related terms

- **User experience (UX) design:** all aspects of the user's interaction with a product or device
 - Design for a particular user experience
 - Related to how people feel about a product



Do not get too caught up with the terms!

Next time

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