



# HUMAN-COMPUTER INTERACTION

## Lecture 2 – Introduction

- *“Good artists borrow, great artists steal”*
  - ▣ Pablo Picasso

# Introduction

3

- 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 SIGCHI [http://old.sigchi.org/cdg/cdg2.html#2\\_1](http://old.sigchi.org/cdg/cdg2.html#2_1)
- HCI in the large is an interdisciplinary area and draws from supporting knowledge on both the machine and the human side
  - ▣ Computer science (application design and engineering of human interfaces)
  - ▣ psychology (the application of theories of cognitive processes and the empirical analysis of user behavior)
  - ▣ sociology and anthropology (interactions between technology, work, and organization)
  - ▣ and industrial design (interactive products)

- Human-computer interaction is concerned with the joint performance of tasks by humans and machines;
  - ▣ the structure of communication between human and machine
  - ▣ human capabilities to use machines (including the learnability of interfaces);
  - ▣ algorithms and programming of the interface itself;
  - ▣ engineering concerns that arise in designing and building interfaces;
  - ▣ the process of specification, design, and implementation of interfaces;
  - ▣ and design trade-offs.
- Human-computer interaction thus has science, engineering, and design aspects.

# HCI

5

- Interaction between users and computers occurs at the user interface (or simply interface)
  - ▣ includes both software and hardware
- An important facet of HCI is achieving user satisfaction
- Also sometimes referred to as **man-machine interaction (MMI)** or **computer-human interaction (CHI)**

# Why HCI?

6

- *“The best and brightest minds of today apply themselves to increasing the effectiveness of software and the quality of its behavior.”*
  - ▣ Alan Cooper
- *“... because our point of departure is relentlessly human-centered, rather than technology-centered.”*
  - ▣ Alan Cooper
- HCI is important, because poorly designed human-machine interfaces can lead to many unexpected problems

# HCI Goals

7

- To **improve** the interactions between users and computers by making computers more **usable** and **receptive** to the user's needs
- **Design** systems that minimize the barrier between the human's cognitive model of what they want to accomplish and the computer's understanding of the user's task

# HCI in Practice

8

- Professional practitioners in HCI are usually designers concerned with the practical application of design methodologies to real-world problems
- Their work often revolves around
  - ▣ designing graphical user interfaces and web interfaces
  - ▣ developing new design methodologies
  - ▣ experimenting with new hardware devices
  - ▣ prototyping new software systems
  - ▣ exploring new paradigms for interaction
  - ▣ and developing models and theories of interaction