Course Description

Technology is extending human ability. What effect does this technological symbiosis have on our mind and brain? In this course we will explore the neuroscientific effects that interaction with technology has on the human brain, in an effort to better understand how HCI researchers should integrate technology with human biological and psychological systems. Topics include introduction to innate brain structures and processes, for example the dopaminergic reward system and technological addiction; the motor and sensory brain region and their functions; extension of human ability by technological instruments and sensory substitution; biological aspects of telecommunication and the comparison between face to face communication and communication that is mediated by technology; the neuroscientific aspects of virtual reality and reality substitution; and more.
Course Goals

The goal of the course is to expose students to basic and robust brain structures and processes relevant to HCI. This knowledge will facilitate the decision-making process of interaction design. By understanding the inner process of the brain in accordance with the technological advancement available to them, HCI designers will benefit from a human-oriented knowledgeable approach in the design process. We will discuss known HCI paradigms and connect them to the working brain structures that support them for a better understanding of the influences on the interaction process.

Grading

Grade composition:

1. Participation (10%)
2. Course project (90%)
   - Abstract submission (10%)
   - Oral presentation (20%)
   - Final Assignment (60%)

Lecturer Office Hours

Jonathan: Monday 12:00-14:00

Reading List


Mandatory Reading: Wolpaw JR. Brain-computer interfaces as new brain output pathways. J Physiol. 2007;579(Pt 3):613-9


