

Building Interactive Systems

Closing

Professor Bilge Mutlu | Spring 2023

What did we learn this semester?

→ **Principles**

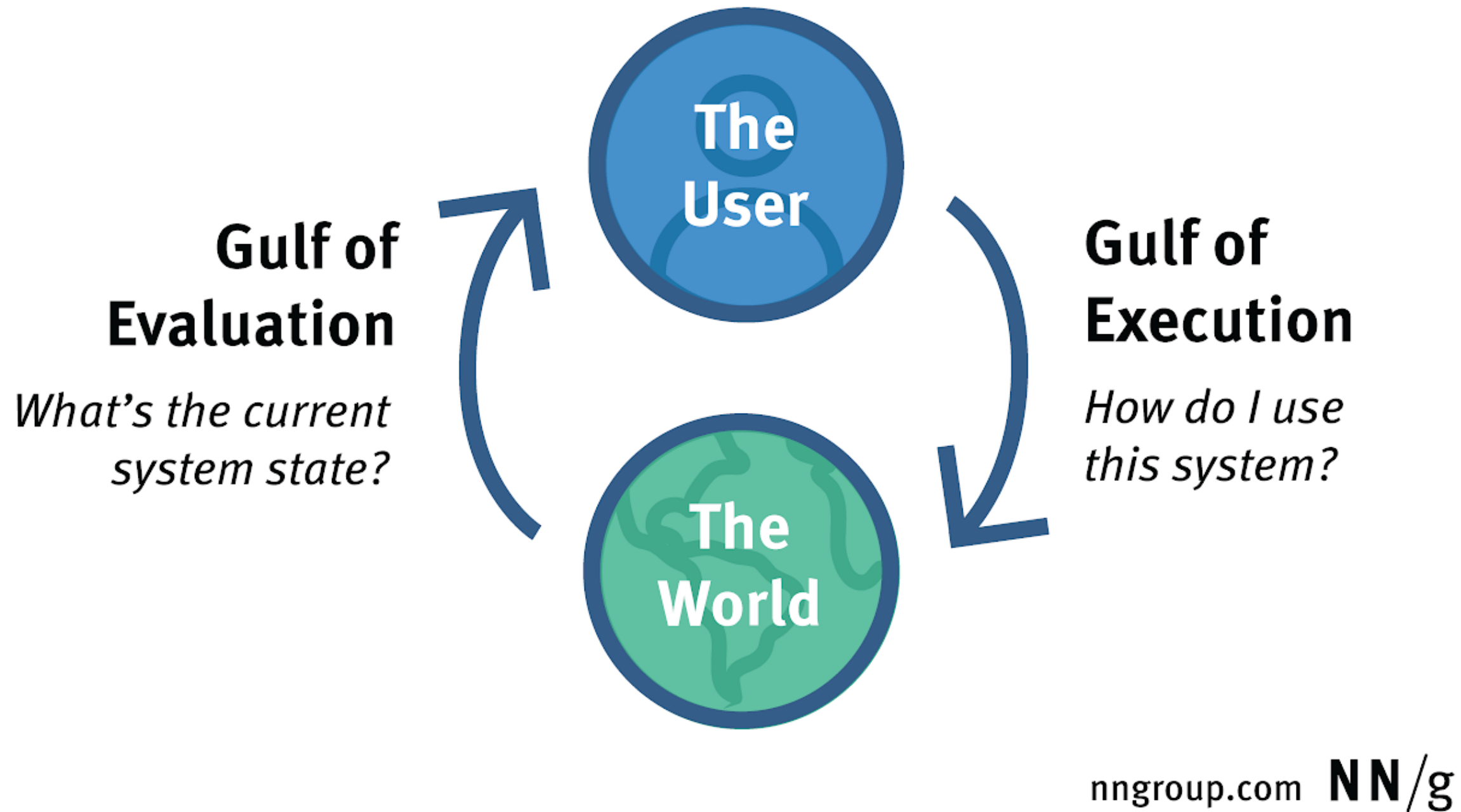
- Everything we design and interact with is a system
- Users are a part of these systems → design must be human-centered

→ **Knowlege**

- Fundamental building blocks of interactive systems

→ **Skills**

- Human-centered systems research skills



¹[# The Two UX Gulfs: Evaluation and Execution](#)

Building Blocks of Interactive Systems

→ **Input**

- Sensing users
- Modeling & tracking users

→ **Adaptivity**

- Learning & prediction
- Personalization & adaptation

→ **Interactivity**

- Direct manipulation

→ **Interactivity** (cont'd)

- Conversational interaction
- Multi-modal interaction
- Mixed-initiative interaction

→ **Output**

- Visual representations
- Embodied representations

Systems Research Skills

- **Analyze:** Define and identify interaction systems, including archetypes, components
- **Design:** Devise, prototype, evaluate new interactive systems
- **Share:** Make and communicate "systems" contributions to literature

Learning Objectives

1. Define interactive systems, identify system archetypes, and determine components
2. Gain familiarity with common approaches to sensing, decision making, representation, and user interaction
3. Gain familiarity with closed-loop, open-loop, and human-in-the-loop systems
4. Define new interactive systems based on application specifications
5. Prototype interactive systems and components using state-of-the-art tools, libraries, and frameworks
6. Design and conduct system and user evaluations
7. Write an “HCI systems” academic paper to present system design, technical specifications, and findings from evaluation

What's next for you?

Other HCI courses:

- **UX research:** *CS-570 Introduction to Human-Computer Interaction* → UX methods (research, design, evaluation)
- **UX building:** *CS-571 Building User Interfaces* → full-stack user interface design and development
- **HCI methods:** *CS/Psych/EdPsych-770 Human-Computer Interaction* → core topics in HCI research; research methods in HCI
- **HCI studying people:** *CS-839 Modeling Users* → how to build complex, predictive models of user cognition and action
- **HCI systems:** *CS-839 Building Interactive Systems* → this class

Research in HCI: see faculty's research → <https://hci.cs.wisc.edu/>

Congratulations & Thank You!

Congratulations for making it to the end of the semester! 🎉 🥳 🎊

Thanks for:

- Participating in the development of this course by providing feedback
- Patience with the various kinks of the first offering of a class
- Inspiring projects, exemplary teamwork, good questions

Always available to give advice, help, etc., so don't hesitate to reach out!

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