

The background is a dark purple gradient. On the left side, there is a large, semi-circular scale with tick marks and numbers ranging from 140 to 260. Several circular and semi-circular lines, some solid and some dashed, are scattered across the page, some with arrows indicating direction. The overall aesthetic is technical and futuristic.

AI USER INTERFACE

TENETS AND TRAPS

WHAT ARE AI UI TENETS & TRAPS?

- These are a **combination** of the **UI Tenets & Traps** and **Guidelines for Human-AI Interactions**.
- **Created by Shari Benko** to evaluate existing AI UI designs and **help guide new AI UI designs from a user centered perspective**.

UI TENETS & TRAPS

Divides UI design best practices into 9 main tenets:

- Understandable (Invisible Element, Poor Grouping, etc.)
- Comfortable (Physical Challenge, Accidental Activation...)
- Responsive (Captive Wait...)
- Efficient
- Forgiving
- Discreet
- Protective
- Habituating
- Beautiful



<https://uitraps.com/>

GUIDELINES FOR HUMAN-AI INTERACTIONS

Guidelines for Human-AI Interaction

Saleema Amershi, Dan Weld^{††}, Mihaela Vorvoreanu, Adam Fourney, Besmira Nushi, Penny Collisson, Jina Suh, Shamsi Iqbal, Paul N. Bennett, Kori Inkpen, Jaime Teevan, Ruth Kikin-Gil, and Eric Horvitz

Microsoft
Redmond, WA, USA
{samershi, mivorvor, adamfo, benushi, pennycoll, jinsuh,
shamsi, pauben, kori, teevan, ruthkg, horvitz}
@microsoft.com

[†]Paul G. Allen School of Computer
Science & Engineering
University of Washington
Seattle, WA, USA
weld@cs.washington.edu

ABSTRACT

Advances in artificial intelligence (AI) frame opportunities and challenges for user interface design. Principles for human-AI interaction have been discussed in the human-computer interaction community for over two decades, but more study and innovation are needed in light of advances in AI and the growing uses of AI technologies in human-facing applications. We propose 18 generally applicable design guidelines for human-AI interaction. These guidelines are validated through multiple rounds of evaluation including a user study with 49 design practitioners who tested the guidelines against 20 popular AI-infused products. The results verify the

KEYWORDS

Human-AI interaction; AI-infused systems; design guidelines

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1. INTRODUCTION

[Guidelines for Human-AI Interaction - Microsoft Research](#)

GUIDELINES FOR HUMAN-AI INTERACTIONS

Make clear what the system can do.

Scope services when in doubt.

Make clear how well the system can do what it can do.

Make clear why the system did what it did.

Time services based on context.

Remember recent interactions.

Show contextually relevant information.

Learn from user behavior.

Match relevant social norms.

Update and adapt cautiously.

Mitigate social biases.

Encourage granular feedback.

Support efficient invocation.

Convey the consequences of user actions.

Support efficient dismissal.

Provide global controls.

Support efficient correction.

Notify users about changes.

COMBINED AI UI TENETS & TRAPS

Divides **AI UI design** best practices into **8 Tenets**

- **Discreet**
- **Forgiving**
- **Habituating**
- **Responsive**
- **Smart**
- **Trustworthy**
- **Unbiased**
- **Understandable**

5 of the 8 AI UI Tenets are carried from UI Tenets & Traps.

2 New Tenets were created to fit the identified traps based on the Microsoft Guidelines.

1 was created based on **prior experience**.

AI UI TENETS & TRAPS

AI UI TENET	AI UI TRAP	EXPLANATION
Discreet	Poor AI Timing	User's current task and environment are disrupted by AI recommendation/decision.
Forgiving	Missing AI Recovery	The AI system doesn't provide a way for the user to refine or recover when the decision/prediction is wrong.
Habituating	Disruptive AI Change	Disruptive changes happen when updating and adapting the AI system's behaviors.
Responsive	Difficult AI Dismissal	Undesired AI system services are difficult to ignore or dismiss.

AI UI TENETS & TRAPS

AI UI TENET	AI UI TRAP	EXPLANATION
Responsive	Forced AI Control	The AI system makes decisions for the end user without first allowing the user to approve the decision.
Responsive	Rigid AI	The AI system does not allow user to globally customize what the AI system monitors and how it behaves.
Smart	Dumb AI	No re-training plan is in place for the AI model to learn over time.
Trustworthy	Hidden AI Abilities	AI decisions/recommendations that could impact a user's current task are hidden from view.

AI UI TENETS & TRAPS

AI UI TENET	AI UI TRAP	EXPLANATION
Trustworthy	Invisible AI Performance Metrics	No indication of the reliability/confidence measure of the recommendation/decision.
Trustworthy	Ambiguous AI Behavior	The AI system provides no explanation of why the system behaved as it did.
Trustworthy	Missing AI User Feedback	The AI system does not allow the user to provide feedback indicating their preferences during regular interaction with the system.
Trustworthy	Hidden AI Feedback Impact	The AI system does not update or convey how user actions will impact future behaviors of the system.
Trustworthy	Ambiguous AI Change	The system does not inform the user when the AI system adds or updates its capabilities.

AI UI TENETS & TRAPS

AI UI TENET	AI UI TRAP	EXPLANATION
Unbiased	AI Social Biases	The AI system's language and behaviors reinforce undesirable and unfair stereotypes and biases.
Understandable	AI Task Mismatch	AI decisions/recommendations shown are not relevant to the user's current task and environment.
Understandable	AI Expectation Mismatch	The AI experience is delivered in a way that doesn't match what users would expect, given their social and cultural context.
Understandable	Effectively Invisible AI Element	The AI system's services are difficult to invoke when needed.

COMBINED AI UI TENETS & TRAPS

17 AI UI Traps Were Identified

- Discreet (1)
- Forgiving (1)
- Habituating (1)
- **Responsive (3)**
- Smart (1)
- **Trustworthy (6)**
- Unbiased (1)
- Understandable (2)

The **highest number of traps (6)** were discovered to fit the **Trustworthy** AI UI Tenet.

The **next highest number of traps (3)** were discovered to fit the **Responsive** AI UI Tenet.

AI UI EVALUATION EXAMPLE DELIVERABLE

AI UI Tenet	DISCREET	RESPONSIVE	TRUSTWORTHY	UNDERSTANDABLE
AI UI Trap	Poor AI Timing	Forced AI Control	Ambiguous AI Behavior	AI Expectation Mismatch
Severity	1	2	3	4
Reasoning	User's current task and environment are disrupted by AI recommendation/decision.	The AI system makes decisions for the end user without first allowing the user to approve the decision.	The AI system provides no explanation of why the system behaved as it did.	The AI experience is delivered in a way that doesn't match what users would expect, given their social and cultural context.
Recommend				