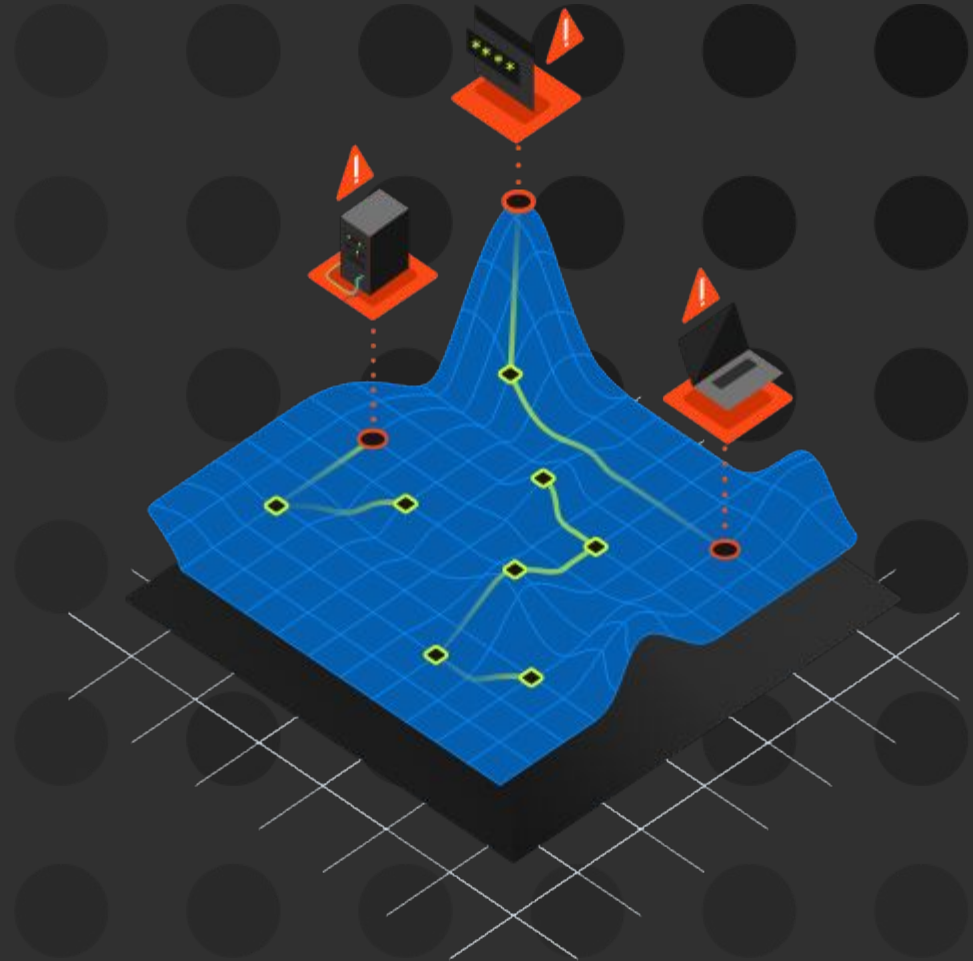


**BITSIGHT**

AI Guild - UX/UI Components

# AI Design Principles & Guidelines

David Roach



# AI Design Principles



## AI Onboarding

Setting expectations and clarifying user intent up front



## User Input

How users input information and guide the system



## AI Output

How AI presents responses, handles complexity, and gives clarity



## User Feedback

Allowing users to correct, reverse, or refine interactions



## User Control

How the AI system adapts, learns, and improves over time

01

# AI Onboarding

# AI Onboarding

## Expectation Framing

Users often assume software is deterministic. In AI systems, this can lead to misplaced trust or frustration. Framing expectations early helps establish a healthy model of the system's capabilities and limitations.

PRODUCT	PHRASE	CONTEXT
GitHub Copilot	I can help, but I make mistakes.	Welcome tooltip/copy
LinkedIn	People you may know	Section headers
ChatGPT	May occasionally produce incorrect info	System message or UI bar

## Intent Scaffolding

Users often encounter a blank slate or are unaware of the AI system's capabilities. This pattern helps mitigate that friction by revealing affordances or guiding users toward successful prompts or actions.

PRODUCT	EXAMPLE	UI MECHANISMS
ChatGPT	Suggested prompts in home screen	Static buttons
Google Maps	Filter chips ("Open now," "4+ Stars")	Inline chip filter
Notion AI	Examples of tasks under text input	Prompt starter blocks

Here are some things you can try.

Set a reminder

Pause this song



What time is sunset?

Send a message

Set a timer for 25 minutes



Learn more about Siri

-00:09





i want to analyze the impact of social media on mental health



Analyzing the impact of social media on mental health is a complex but important topic that intersects psychology, sociology, and technology. Here's an outline of how you could approach this analysis, including key aspects to consider:

### 1. Define the Scope

- **What aspect of mental health?** Consider areas like anxiety, depression, self-esteem, sleep quality, or social isolation.
- **What demographic?**



Message ChatGPT

curated by

**aiverse.design**

00:00



02

# User Input

# User Input

## Expressive Input

Users should be able to anticipate the AI's output based on their inputs, avoiding any surprises regarding its interpretation. Combine inputs with traditional prompts

PRODUCT	INPUT TYPE	CONTEXT
Midjourney	Emoji-as-prompt	Visual generation input
Luma AI	Madlibs-style prompt builder	Encourages structured creativity
Figma	2x2 grid	Modifying copy across a range of options
Canva Magic Write	Icon-based prompt builder	Guided content creation

## Content Expansion

Users often encounter a blank slate or are unaware of the AI system's capabilities. This pattern helps mitigate that friction by revealing affordances or guiding users toward successful prompts or actions.

PRODUCT	INPUT TYPE	CONTEXT
Perplexity	Upload document	Grounded document Q&A
Zapier AI	Add integrations to inform assistant	Workflow automation, system integration
Writer AI	Picks knowledge base from dropdown	Domain-specific support

Find papers

Research report

Systematic review

What are the most effective user experience (UX) design patterns for improving user interaction with artificial intelligence interfaces?



Great question!



More tools

Upload and extract

Chat with papers

Recent

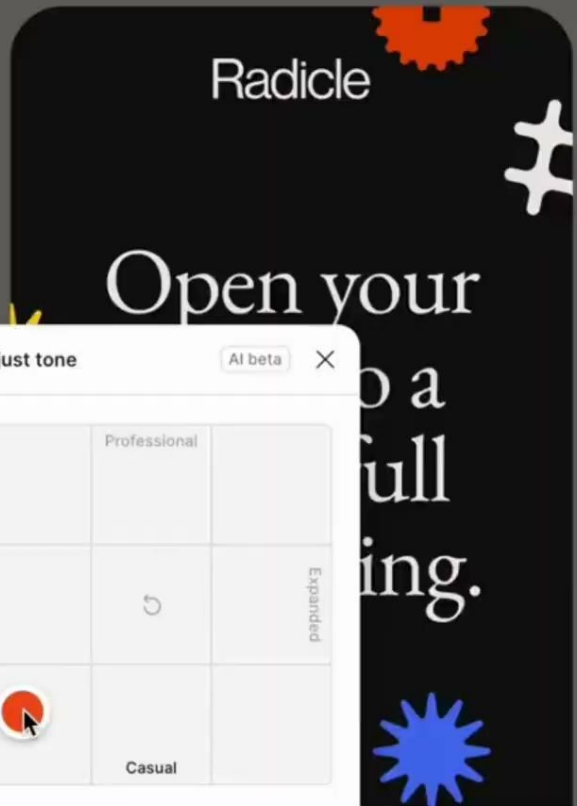
- AI-Driven UX vs. Traditional Design Review 9:38pm Mar 4 ...
- AI-Driven UX vs. Traditional Design Review 9:30pm Mar 4 ...



00:00



Radicle makes STEM learning fun with real-world problem-solving activities in bite-sized format.



Adjust tone AI beta ×

	Professional	
Concise		Expanded
	Casual	

Or pick a preset

Executive      Technical

Basic      Education:00:00




# aiverse.design



AI block

Done

Generate



 Custom output



Describe the content that should be generated.  to mention people, pages, or dates



Using ⓘ

 Current page only —  aiverse.design



-00:29



03

# AI Output

# AI Output

## Processing

AI responses often involve invisible, multi-step operations. Without clear signals that work is happening, users may feel confused, impatient, or assume the system is broken.

PRODUCT	PROCESSING MECHANISM	CONTEXT	TYPE
ChatGPT	Typing dots animation (...) while streaming response	Chat generation — shows active thinking	Streaming
Claude (Artifacts)	Typing animation while drafting, live updating doc preview	Full document creation with inline artifacts	Streaming + partial steps
Elicit	Show retrieval, search, and reasoning stages visibly before synthesis	Research agent surfacing work-in-progress	Processing Steps
Attio AI	Status updates like "Analyzing meeting notes..." → "Drafting summary..."	CRM workflow with multi-stage processing	Processing Steps
Perplexity	Source search previews before composing full response	Retrieval-augmented Q&A system	Processing Steps

## Confidence & Explainability

This pattern helps users gauge the system's trustworthiness by providing confidence signals. Confidence can be conveyed through visual, textual, or structural cues.

PRODUCT	CONFIDENCE SIGNAL	MODALITY	DISPLAY CONTEXT	DESIGN NOTES
GitHub Copilot	Dimmed gray code suggestions	Visual	Inline in code editor	Suggests tentative contribution that solidifies when accepted
Salesforce Einstein	Color-coded "Likely to convert" labels	Visual	Analytics dashboard	Uses color and label to signal confidence in predicted outcomes
Perplexity	Citation count implying confidence	Structural	Below generated answers	Encourages trust through quantity and quality of supporting links
Notion AI	"Verify this content" callout	Textual	In block editor	Textual "verify this content" callout



# Workback

Assign

Tags

Add a property



General / Docs

## Website redesign meeting @October 19, 2023

### Action items from last week:

- schedule meeting with team
- improve guardrails for testing
- check in with data science for confirmation



## Action items from last week

Ask Notion AI Beta

Clear



week's website redesign meeting: Please list them as bullets.

The action items from the last week's website redesign meeting are:

- Schedule a meeting with the team
- Improve guardrails for testing
- Check in with data science for confirmation
- Write up a test plan and evaluation framework



10 pages found

- 1 Website redesign meeting @October...
- Workback plan @Today
- Website redesign kickoff meeting @...
- Website redesign plan

Copy

Try again

Ask a question...

00:00



op-sell opportunities Explore content personalization, multilingual VR expansions, and ongoing user engagement audits to maximize the impact of Acme's VR integration.



Last contact was yesterday between Emy and opportunity for Acme to adopt VR in their retail

g, and ROI analysis. Yesterday  
ard pending executive approval.

esign. May 15, 2024  
omization and pricing.

es. May 12, 2024  
nd ROI.



## Related News



### Conversation Starters

- Congratulations on the recent acquisition! How do you see this new addition complementing your existing VR initiatives?
- With HoloTech's new product entering the market, do you see any challenges in how Acme plans to differentiate its offerings?
- Do you think HoloTech's recent innovation introduces any new challenges or opportunities for Acme?



### Summary: Acme Corporation Exp...

Top takeaways: 1. Acme's acquisition of Innov...



### Summary: HoloTech Unveils Next...



00:00



# AI Output

## Voice & Tone

A consistent and appropriate voice and tone reinforce trust and confidence in the AI's outputs. The way the AI communicates helps reassure users about the quality of the output and the integrity of the data.

PRODUCT	EXAMPLE EXPLANATION	DISPLAY CONTEXT
Netflix	"Because you watched X"	Below title
Amazon	"Deals related to items you've saved"	Grid header
Spotify	"Based on your recent listening"	Playlist

## Multiple Outputs Management

When a system generates multiple valid outputs, this pattern helps users compare, select, or merge options effectively. It empowers users by providing clear choices rather than overwhelming them.

PRODUCT	OUTPUT OPTIONS UI	INTERACTION TYPE
ChatGPT	"Regenerate" and "Compare drafts"	Tabbed or side-by-side compare
Midjourney	Grid of 4-8 variations	Image thumbnails with actions
Gmail	"Other drafts" preview	Click-to-insert alternate draft

04

# User Feedback

# User Feedback

## Undo & Version Control

In traditional UX, actions have predictable outcomes (e.g., delete, bold). AI outputs are generative, meaning users may not fully anticipate changes.

PRODUCT	INPUT TYPE	CONTEXT
Notion	"Undo" after AI rewrite	Writing and document editing
Google Docs	"See version history"	Document collaboration
Cursor	"Show Diff" for AI-generated code edits	Developer IDE with inline AI edits
ChatGPT (Canvas)	Visual diff view of AI-generated changes	Structured doc/visual editing

## Inline Correction

Users should be able to correct AI output directly within the interface, without needing to rewrite prompts or restart interactions.

PRODUCT	UI VARIANT	DESCRIPTION	BEST FOR
Notion, Jasper	Hover Actions	Appears on hover as a small menu (e.g., rewrite, shorten, rephrase)	Dense editors, keeps UI clean
Notion, Jasper	Side panel controls	Edits open controls in a sidebar (e.g., sliders for tone/length)	Structured authoring tools
Sana, Wordtune	Tap-to-cycle	Click regenerates or cycles through alternates	Conversational flows, low-friction revision
Grammarly, Notion AI	Editable inline text	Output becomes directly editable, often with AI-assist cues	Content apps, doc editors
Jasper, Grammarly	Dropdowns with options	Predefined rewrite options (e.g., tone, structure, format)	Guided correction paths, formality control

To Superhuman Team



New Superhuman Website 🚀

Hi team,

I am thrilled to announce the launch of our brand new website! 🚀

It's beautiful, it's sleek, and it perfectly captures the essence of what we do here at Superhuman. And we owe a huge, massive, absolutely enormous congratulations to Brittany for her stunning design work.

Brittany, you knocked it out of the park. We couldn't have done it without your incredible talent and dedication. Thank you for bringing the vision to life and making it look so darn good.

To everyone else on the team, I want to say a huge thank you for all your hard work and effort. This website is a true testament to the incredible team we have here at Superhuman, and I am so excited for everyone to see your great work.

Keep up the amazing work, team. We're just getting started.

Best,  
Rahul

Send Send later Remind me



00:00



# User Feedback

## Feedback Prompts & Responses

Users should be able to anticipate the AI's output based on their inputs, avoiding any surprises regarding its interpretation.  
Combine inputs with traditional prompts

PRODUCT	PROMPT TYPE	EXAMPLE INTERACTION	CONTEXT/ BEST FOR
ChatGPT	Thumbs up/down	👍/👎 below AI responses	Conversational chat UIs, completions, summaries
Duolingo	Star rating	1-5 stars after a lesson	Learning reinforcement and satisfaction tracking
Google Docs	Yes/No question	"Was this suggestion helpful?"	Inline feedback for grammar or tone suggestions

05

# User Control

# User Control

## Memory Control

Users need to understand what an AI system remembers and have control over that information. Providing visibility and control over AI memory (viewing, editing, erasing) builds transparency and safeguards trust.

PRODUCT	MEMORY CONTROL MECHANISM	CONTEXT	DESIGN VARIANT TYPE
Chat GPT	Toggle memory on/off, editable memory entries	Conversation history, personalization	Global Memory Toggle + Editable Memory List
Replika	Shows what it has "learned" about the user	Conversational AI / relationship bot	Editable Memory List
Alexa	Auto-expiring memories or user-triggered deletes	Voice interface	Session vs. Persistent Memory
Notion	Uses doc/workspace scope as "memory"	Workspace-based productivity AI	Memory as Context Picker

## Personalization

Personalization bridges the gap between generic AI outputs and individual user requirements, styles, or intentions. Systems can learn preferences over time (implicit) or allow users to guide behavior (explicit).

PRODUCT	PERSONALIZATION MECHANISM	CONTEXT / PURPOSE
Spotify AI DJ	Curated commentary based on user taste	Personalized playlist narration + dynamic music selection
Duolingo	Adjusts difficulty based on past mistakes	Personalized reinforcement learning and pacing
Midjourney	/prefer settings (like style weights)	Influences model outputs toward user's preferred visual aesthetic
Perplexity	Tracks preferred sources/topics	Personalizes search results toward user reading habits



New Context



- Search...
- Today is... +
- You are an expert +
- Astro
- Collection: Anthropic Docs - Getting Started
- Collection: Astro Component Examples
- Collection: Astro Docs
- Collection: Tailwind Docs
- Grammar
- Metaprompt
- Next.js
- Project: Home App
- Rust - Workspace deps
- Rust: Async - Async-std
- Rust: Async - Tokio
- Rust: Crate - gpui
- Rust: Zed-Flavored**
- Rust: Zed-style Crates
- SQL Query
- Typescript
- Workflow: Terse
- Writing: Organize Brain Dump

## Rust: Zed-Flavored

54 tokens



515 / 200k

## What is Zed

/prompt Zed: Zed

## How Zed writes Rust

/prompt Rust: Async - Async-std

/prompt Rust: Zed-style Crates

/prompt Rust - Workspace deps



-00:34



# Our Design System

Bitsight Design System

# AI Identity

Visualizing the presence of AI, when it is active, possible, processing or outputting content.

Expectation Framing Principle

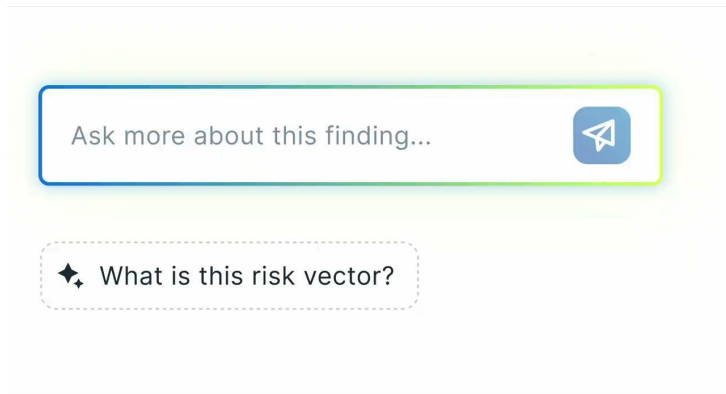


Bitsight Design System

# User Input - Prompt

Prompt component is one of the first elements a user will have the ability to interact with in a chatbot type feature.

Expressive Input Principle



# AI Output - Chat

This component is the first iteration of an AI output with content. This has the ability to display copy, allow for sourcing material, user feedback and other utility actions in the footer of the output.

Confidence Visualization

Voice and Tone

Feedback Prompts and Responses

Identity



Body

The finding has a BAD grade because it indicates "No SPF record". The absence of an SPF record means there's no mechanism to verify the authenticity of emails purportedly sent from your domain. <sup>1</sup>

The finding has a BAD grade because it indicates "No SPF record". The absence of an SPF record means there's no mechanism to verify the authenticity of emails purportedly sent from your domain. <sup>2</sup> <sup>3</sup>

Sourcing

**Sources**

1. Source Page Title

2. Source Page Title

3. Source Page Title

Footer



# Design System Process

- Collaborate with product and engineering teams to define and assess potential AI functionalities and user experiences.
- Reinforce AI Design Principles and establish user experience standards for new AI features.
- Gather requirements for features and define new user experience patterns or components.
- Map the maturity model for new features, identifying elements for future reuse and codification within the design system and guidelines.
- Reuse existing components, incorporating additional functionality and updates that impact the user experience.

The image shows a security dashboard for Saperix, Inc. The main section displays a "Security Rating" of **470** with a sub-indicator of "30 Points" and "Since Jul 18, 2025". Above this, an "AI Summary" provides context: "Between July 18 and October 16, 2025, Saperix, Inc.'s security rating decreased from Exploited and Botnet findings, specifically Pushran and PrizeRAT infections, which. Despite this decline, Saperix, Inc. showed some improvement, with its SSL Certificate 'F' to a 'D' grade. The company identified 4431 new findings during this period, including findings related to SSL Configurations, Open Ports, Botnet Infections, Insecure SSI findings affecting critical assets, alongside 20 infrastructure changes."

Overlaid on the right is the "AI Findings Assistant" chat window. It features a blue and green star icon and the text "How Can I Assist You Today?" and "Learn about this finding." Below this is a text input field containing "Typing something now |", a "Knowledge Base" dropdown, and icons for attachments and voice input. A section titled "Example of queries:" lists three sample questions: "What is this risk vector?", "How do I remediate?", and "How will this affect my rating?".