
Postgraduate Certificate in Cyberpsychology and Neuroscience

Human-Computer Interaction

Affordance

Perceived affordance, false affordance

A property of an interface element that suggests how it can be used, such as a button that looks pressable. Designers leverage affordances to guide user actions, but misleading designs can cause errors.

Ambient Display

Peripheral awareness, calm technology

A visual or auditory output that conveys information subtly without demanding full attention, like a smart-home light indicating temperature. Useful for continuous monitoring, yet may be overlooked in noisy environments.

Anthropomorphism

Human-like agents, social robots

Attributing human traits to digital agents, influencing trust and engagement. While it can increase user comfort, excessive anthropomorphism may raise unrealistic expectations of system capabilities.

Application Programming Interface (API)

REST, SOAP

A set of rules that allow software components to communicate. In HCI, APIs enable integration of third-party services, such as voice assistants, expanding functionality but requiring careful privacy considerations.

Artificial Neural Network (ANN)

Deep learning, back-propagation

Computational models inspired by brain structures used for pattern recognition in interfaces, e.G., Predictive text. They improve adaptability but can be opaque, making debugging challenging.

Attention Allocation

Selective attention, multitasking

The process of distributing cognitive resources across tasks. Interfaces that demand excessive attention can cause overload, while well-designed cues help users prioritize information.

Auditory Icon

Earcons, sonification

A brief sound that represents a specific event, like a trash-can "ding" when a file is deleted. Auditory icons support accessibility but must avoid auditory clutter.

Automation Bias

Overreliance, trust calibration

The tendency to trust automated decisions, potentially ignoring contradictory human judgment. Designers must provide transparent feedback to mitigate this bias.

Avatar

Virtual representation, embodied agents

A graphical embodiment of a user or system in digital environments. Avatars enhance presence in virtual meetings, yet their realism can affect user perception of authenticity.

Back-Button Navigation

History stack, forward navigation

A web browser feature that returns users to previous states. Consistent back-button behavior reduces disorientation, but dynamic content may break expected functionality.

Baseline Performance

Usability benchmark, control condition

The reference level of task efficiency measured before an interface change. Establishing a baseline helps evaluate design improvements, though variability across user groups can complicate interpretation.

Behavioral Biometrics

Keystroke dynamics, gait analysis

Measurement of user behavior for authentication. Incorporating these metrics can enhance security, yet privacy concerns arise from continuous monitoring.

Beta Testing

Field trial, pilot study

A phase where a near-final product is released to a limited audience for feedback. In self-paced courses, learners can simulate beta testing through scenario analysis, identifying usability flaws.

Bias-Variance Tradeoff

Model complexity, overfitting

Balancing model flexibility against prediction error. In HCI, predictive interfaces must avoid over-personalization that reduces generalizability.

Brain-Computer Interface (BCI)

Neurofeedback, EEG

Direct communication pathway between brain activity and external devices. BCIs enable hands-free control of applications, yet signal noise and user fatigue pose challenges.

Breakpoint

Responsive design, media query

A screen width where layout changes to maintain usability. Defining appropriate breakpoints ensures content remains legible across devices, though too many can increase development overhead.

Cache Invalidation

Stale data, consistency

Ensuring that stored copies of data reflect current states. Improper cache handling can lead to outdated information displayed, undermining user trust.

Calm Technology

Ambient display, peripheral awareness

Design philosophy that technology should inform without demanding focus. Smart watches that vibrate for notifications exemplify calm tech, but excessive subtle cues may be missed.

Canonical Model

Task model, user flow

A standard representation of user actions for a given goal. Using canonical models aids consistency across platforms, yet may oversimplify complex workflows.

Card Sorting

Information architecture, taxonomy

A method where participants group content items to reveal intuitive structures. Though not a hands-on activity, learners can analyze sample sorting results to infer navigation patterns.

Centroid

K-means clustering, data point

The center of a cluster used in grouping similar interface elements, such as grouping icons by usage frequency. Accurate centroid calculation improves layout efficiency.

Centricity

User-centered design, focus group

Placing the user at the core of design decisions. Maintaining centricity ensures relevance, but may conflict with technical constraints.

Change Blindness

Visual attention, inattentional blindness

Failure to notice alterations in a visual scene. Interfaces that frequently update without clear cues can exacerbate this effect, leading to missed alerts.

Chatbot

Conversational agent, NLP

Software that simulates human conversation, often used for customer support. Effective chatbots reduce cognitive load, yet limited language understanding can frustrate users.

Chunking

Miller's law, memory load

Organizing information into manageable units. For example, displaying credit-card numbers in groups of four improves readability, while poor chunking increases error rates.

Cognitive Load

Working memory, extraneous load

The amount of mental effort required to process information. Interfaces that minimize unnecessary steps reduce cognitive load, enhancing task performance.

Cognitive Walkthrough

Heuristic evaluation, task analysis

A step-by-step inspection method to assess ease of learning. Learners can simulate a walkthrough by predicting user actions, identifying potential friction points.

Co-Design

Participatory design, stakeholder involvement

Collaborative creation of solutions with end-users. While co-design yields tailored outcomes, aligning diverse perspectives can be time-consuming.

Contextual Inquiry

Field observation, ethnography

A research technique where designers observe users in their natural environment. Understanding context informs adaptive interfaces, though privacy concerns must be addressed.

Control Flow

Event handling, state machine

The order in which the system processes inputs and generates outputs. Clear control flow prevents unexpected behavior, especially in interactive applications with multiple concurrent events.

Conversion Rate

Goal completion, funnel analysis

The proportion of users who achieve a desired outcome, such as signing up for a service. Optimizing conversion involves simplifying steps and providing persuasive cues.

Cooperative Multitasking

Yield, thread scheduling

A system where tasks voluntarily yield control to enable others to run. In UI design, cooperative multitasking can prevent freezing, but poorly yielding tasks may degrade responsiveness.

Correlation Coefficient

Pearson r , statistical relationship

A measure of how two variables move together. In HCI, high correlation between eye-tracking data and task performance can reveal interface bottlenecks.

Cross-Platform Compatibility

Responsive design, progressive enhancement

Ensuring an application functions across operating systems and devices. Achieving compatibility broadens reach, yet testing across varied configurations is resource-intensive.

Cross-modal Interaction

Multisensory feedback, haptic-visual synergy

Combining different sensory channels, such as tactile vibration paired with visual alerts. Cross-modal cues can reinforce messages, but mismatched timing may cause confusion.

Data Visualization

Heat map, scatter plot

Graphical representation of information to aid comprehension. Effective visualizations reveal usage patterns, yet overly complex charts can overwhelm users.

Deep Linking

URI scheme, anchor navigation

A URL that points directly to a specific location within an app. Deep links improve navigation efficiency, but must handle missing or outdated targets gracefully.

Design Pattern

Singleton, observer

Reusable solution to a common design problem. Applying established patterns accelerates development, yet inappropriate pattern selection can lead to rigidity.

Design Sprint

Rapid prototyping, iteration

A time-boxed process for solving design challenges. Although not a physical workshop, learners can simulate sprint phases through case studies, fostering quick ideation.

Device Agnosticism

Platform independence, universal design

Creating interfaces that function regardless of hardware specifics. Device-agnostic designs improve accessibility, yet must account for varying input modalities.

Digital Twin

Virtual model, simulation

A virtual replica of a physical system used for testing interactions. In HCI, digital twins can model user behavior under varied conditions, highlighting potential usability issues before deployment.

Disability Access

WCAG, assistive technology

Ensuring that digital products are usable by people with impairments. Implementing alt text and keyboard navigation enhances inclusivity, but compliance alone does not guarantee optimal experience.

Distributed Cognition

External memory, collaborative work

The notion that cognitive processes can be spread across people, tools, and environments. Designing interfaces that support distributed cognition, such as shared dashboards, facilitates teamwork.

Don't-Make-Me-Think Principle

Usability heuristic, intuitive design

A guideline stating that interfaces should be self-explanatory. Reducing mental effort accelerates task completion, yet oversimplification may hide advanced features.

Double-Click

Click-through, activation

A rapid two-click input used to open files or execute commands. While familiar to many, double-click can be problematic on touchscreens, requiring alternative gestures.

Dynamic Content

Ajax, real-time update

Content that changes without a full page reload. Dynamic interfaces improve responsiveness, but must manage loading indicators to avoid user uncertainty.

Edge Computing

Fog computing, latency reduction

Processing data near the source to minimize delay. Edge computing enables low-latency interactions for AR/VR, yet introduces security considerations at the device level.

Empathy Map

User persona, affective modeling

A visual tool capturing what users say, think, feel, and do. Empathy maps guide design decisions, though they rely on accurate user insights.

End-User Programming

Macro scripts, visual programming

Allowing users to create or modify functionality without formal coding. This empowers customization, but may introduce errors if users lack technical understanding.

Eye-Tracking

Gaze path, fixation duration

Technology that records where users look on a screen. Eye-tracking data informs layout optimization, yet equipment cost limits widespread adoption.

Feedback Loop

Closed-loop system, reinforcement

A cycle where user actions elicit system responses, influencing future behavior. Effective loops sustain engagement, but delayed feedback can disrupt learning.

Fitts's Law

Movement time, target size

Predicts the time required to move to a target based on distance and size. Applying Fitts's Law guides button placement, reducing selection time.

Fidelity (Prototype)

Low-fidelity, high-fidelity

The level of detail in a prototype. Low-fidelity prototypes enable rapid idea testing, while high-fidelity versions reveal fine-grained usability issues.

First-Click Ratio

Task success, navigation efficiency

The proportion of users who reach their goal after a single click. High first-click ratios indicate intuitive navigation, yet complex tasks may naturally lower the metric.

Fixed-Action Pattern

Behavioral script, habit loop

A sequence of actions triggered by a specific stimulus. Interfaces that align with established patterns, such as swiping to delete, reduce learning curves.

Floating Action Button (FAB)

Material design, primary action

A circular button that hovers over content to emphasize a key function. FABs draw attention, but excessive use can clutter screens.

Force-Touch

3D Touch, pressure sensitivity

A touch input that varies based on applied pressure. Force-Touch enables context menus, yet hardware variability may affect consistency.

Framework (UI)

Bootstrap, Material-UI

A collection of pre-built components that accelerate UI development. Frameworks ensure consistency, but reliance on defaults may limit creative expression.

Framing Effect

Decision bias, choice architecture

How information presentation influences user decisions. Positive framing of privacy settings can increase consent, while negative framing may deter engagement.

Friction (UX)

Drop-off, barrier

Elements that impede user flow, such as mandatory fields. Reducing friction improves conversion, yet some friction (e.G., Confirmation dialogs) safeguards against mistakes.

Gamification

Badges, leaderboards

Applying game mechanics to non-game contexts to boost motivation. Gamified progress bars can increase task completion, but over-competition may alienate some users.

Gesture Recognition

Swipe, pinch

Interpreting user motions as commands. Gesture-based controls enable natural interaction, yet must be discoverable and tolerant of variance.

Global Navigation Bar

Navbar, site map

A persistent menu that provides access to primary sections. Consistent global navigation reduces orientation loss, but overly dense menus can overwhelm.

Grammatical Interface

Natural language UI, conversational UI

Allowing users to interact through text or speech using everyday language. This lowers learning barriers, yet parsing ambiguity remains a technical hurdle.

Heuristic Evaluation

Nielsen heuristics, expert review

A usability inspection method where experts assess compliance with recognized principles. Heuristic reviews quickly uncover issues, but may miss context-specific problems.

Human-Centered AI

Explainable AI, ethical AI

Designing artificial intelligence systems that prioritize user values and transparency. Human-centered AI fosters trust, yet balancing performance with interpretability is complex.

Human-Machine Interaction (HMI)

Cyber-physical systems, control loops

The broader field encompassing interactions between people and automated devices. HMI principles inform safety-critical interfaces, such as medical equipment dashboards.

Hybrid Interface

Multimodal, mixed reality

Combines multiple interaction modalities, like voice and touch. Hybrid designs increase accessibility, yet synchronizing modalities demands careful timing.

Iconography

Glyph, symbol set

The visual language of icons used throughout an interface. Consistent iconography aids recognition, but culturally specific symbols may cause misinterpretation.

Idle Time

Think time, pause

Period when a user is not actively interacting. Designing for idle time, such as displaying tips, can enhance learning, yet excessive interruptions may irritate.

Implicit Interaction

Context awareness, sensor fusion

System responses triggered by environmental cues without explicit user commands. Implicit interactions streamline workflows, but raise privacy concerns when data is inferred.

In-situ Evaluation

Contextual inquiry, field study

Assessing an interface within its natural usage environment. In-situ evaluation captures authentic behavior, yet logistical constraints can limit sample size.

Information Architecture (IA)

Navigation hierarchy, taxonomy

The structural design of content organization. A clear IA enables users to locate information efficiently, while poor IA leads to disorientation.

Interaction Cost

Effort, steps

The amount of work required to complete a task. Reducing interaction cost by minimizing clicks improves satisfaction, though sometimes additional steps are needed for security.

Interaction Design (IxD)

Task flow, feedback

The discipline of shaping digital interfaces to support user actions. IxD focuses on timing, response, and sequence, ensuring smooth experiences.

Interface Metaphor

Desktop, trash can

A familiar concept used to help users understand digital functions. Metaphors accelerate learning, yet outdated metaphors can hinder adoption of new paradigms.

Iterative Design

Prototype cycle, refinement

A cyclical process of building, testing, and improving a product. Iteration fosters user-aligned solutions, though frequent changes may cause version fatigue.

Judgment Heuristic

Availability, representativeness

Mental shortcuts that influence decision making. Interfaces that highlight recent alerts exploit the availability heuristic, potentially biasing user attention.

Keyboard Shortcut

Hotkey, accelerator

A combination of keys that triggers commands quickly. Providing shortcuts accelerates expert workflows, yet must be discoverable for novice users.

Knowledge Base

FAQ, self-service portal

A repository of information that users can search for answers. Well-structured knowledge bases reduce support tickets, but outdated content erodes credibility.

Latency

Round-trip time, response delay

The delay between user input and system response. High latency degrades perceived performance, prompting designers to use loading indicators to manage expectations.

Learnability

Onboarding, skill acquisition

The ease with which new users achieve proficiency. Interfaces with clear affordances and progressive disclosure improve learnability, yet overly simplified designs may limit advanced functionality.

Link Rot

Broken link, dead URL

When hyperlinks become invalid over time. Regular link audits preserve content integrity and maintain user trust.

Live Prototype

Clickable mockup, interactive demo

A functional representation that simulates real interactions. Live prototypes enable realistic usability testing, though they may lack backend integration.

Load Balancing

Server farm, traffic distribution

Distributing user requests across multiple resources to maintain performance. Proper load balancing ensures consistent response times, essential for high-traffic applications.

Localization

Internationalization, translation

Adapting an interface for specific languages and cultures. Effective localization improves global reach, yet requires careful handling of date, number, and text direction formats.

Machine Learning (ML)

Supervised learning, reinforcement learning

Algorithms that improve through data exposure. In HCI, ML powers adaptive interfaces, such as personalized recommendations, but model bias can affect fairness.

Macro Interaction

Task flow, goal-oriented

High-level user actions that achieve broader objectives, like completing a purchase. Designing for macro interactions ensures that sub-tasks align with overall goals.

Material Design

Google UI guidelines, depth cues

A visual language that uses grid-based layouts, responsive animations, and shadows. Material Design creates a cohesive look, yet strict adherence may limit brand differentiation.

Menu Fatigue

Choice overload, decision paralysis

User exhaustion caused by excessively long menus. Streamlining options and employing progressive disclosure mitigate fatigue.

Microinteraction

Toggle switch, toast notification

Small, contained moments that accomplish a single task. Well-designed microinteractions provide feedback and delight, while poorly timed ones can be distracting.

Modal Window

Dialog box, overlay

A UI element that captures focus and requires user action before returning to the main content. Modals direct attention, yet overuse can interrupt workflow.

Model-View-Controller (MVC)

Architecture pattern, separation of concerns

A software design that separates data (model), user interface (view), and business logic (controller). MVC promotes maintainability, though misaligned responsibilities can cause code drift.

Multimodal Interface

Voice-gesture hybrid, cross-modal

Supports multiple input and output channels simultaneously. Multimodal designs increase accessibility, yet synchronizing feedback across modalities is technically demanding.

Neuro-Adaptive Interface

EEG feedback, brain-state driven UI

Adjusts presentation based on real-time neural signals. Neuro-adaptive systems can reduce cognitive load, but require robust signal processing to avoid false adaptations.

Noise-Robust Design

Signal-to-noise ratio, error tolerance

Creating interfaces that function reliably despite environmental disturbances. For example, voice assistants that filter background chatter maintain usability in busy settings.

Onboarding

Tutorial, guided tour

The introductory experience that familiarizes users with core features. Effective onboarding shortens learning curves, yet overly long tutorials risk user abandonment.

Open-Ended Interaction

Free-form text, natural language

Allowing users to input unconstrained data. Open-ended designs enable flexibility, but require sophisticated parsing to interpret intent correctly.

Overlay

Transparent layer, UI mask

A semi-transparent element that sits atop content, often used to focus attention. Overlays can highlight critical alerts, but excessive layering may obscure underlying information.

Paradigm Shift

Technology transition, design revolution

Fundamental change in how users interact with systems, such as moving from mouse-click to touch gestures. Paradigm shifts demand relearning and can create temporary friction.

Pattern Library

Design system, component catalog

A collection of reusable UI patterns. Maintaining a pattern library ensures consistency, yet governance is needed to prevent outdated components.

Pedagogical Agent

Intelligent tutor, virtual coach

A software entity that facilitates learning through interaction. Pedagogical agents can adapt content based on user progress, though their perceived authority influences effectiveness.

Performance Metric

Throughput, error rate

Quantitative measure of system or user efficiency. Selecting appropriate metrics guides design decisions, yet over-reliance on a single metric can skew priorities.

Personalization

Adaptive UI, user profiling

Tailoring content and layout to individual preferences. Personalization can increase relevance, but excessive data collection raises privacy concerns.

Perceptual Load

Visual clutter, sensory bandwidth

The amount of sensory information presented. Managing perceptual load prevents overload, ensuring users can process key elements.

Petri Net

State transition diagram, concurrency model

A graphical tool for modeling concurrent processes. In HCI, Petri nets can represent complex interaction flows, aiding analysis of deadlocks.

Phantom Touch

Ghost click, false positive

An unintended activation caused by hardware or software glitches. Designing tolerant interfaces mitigates adverse effects of phantom touches.

Picture-in-Picture (PiP)

Overlay video, multitasking view

A mode where a video stream appears within a smaller window while other content remains visible. PiP supports multitasking, yet must manage focus to avoid distraction.

Pinch-Zoom

Two-finger gesture, scaling

A touch gesture that enlarges or reduces content. Pinch-zoom enhances readability on mobile, but must be bounded to prevent extreme scaling.

Pixel Density

DPI, resolution

Number of pixels per inch on a display. High pixel density improves visual sharpness, yet demands higher resource usage for rendering.

Predictive Text

Autocomplete, language model

Suggests likely word completions as the user types. Predictive text speeds entry, but may introduce bias if suggestions reflect limited data.

Prototyping

Wireframe, mockup

Creating preliminary versions of an interface to explore ideas. Prototypes allow early detection of usability issues, though they may not reflect final performance constraints.

Psychophysiological Measures

Heart rate variability, skin conductance

Biometric indicators of emotional or cognitive states. Integrating these measures can inform adaptive interfaces, yet interpretation requires domain expertise.

Qualitative Feedback

Open comments, user interview

Non-numeric data that provides insights into user attitudes. Qualitative feedback enriches understanding of pain points, though it can be subjective.

Quantitative Feedback

Likert scale, click count

Numeric data that can be statistically analyzed. Quantitative feedback enables benchmarking, yet may miss nuanced user experiences.

Quick Response (QR) Code

2D barcode, scan interaction

A matrix code that stores data readable by cameras. QR codes bridge physical and digital spaces, but require adequate lighting and camera quality.

Readability

Typography, contrast ratio

Ease with which text can be read. High readability reduces eye strain, while poor contrast impairs accessibility.

Recursive Design

Self-referential UI, nested menus

When an interface component contains instances of itself. Recursive design can simplify complex hierarchies, yet risk infinite loops if not bounded.

Redundancy (Design)

Duplication, fault tolerance

Providing multiple cues for the same information, such as text and icon. Redundancy enhances comprehension, but excessive duplication can clutter the interface.

Reflexive Interaction

Automatic response, habit loop

User actions that become second nature, like pressing "Enter" to submit. Designing for reflexive interactions streamlines tasks, yet may limit discoverability of alternative features.

Responsive Design

Fluid layout, breakpoints

Creating interfaces that adapt to varying screen sizes. Responsive design ensures usability across devices, but requires thorough testing for edge cases.

Retrofit Interface

Legacy integration, wrapper

Adding modern interaction capabilities to an existing system. Retrofit solutions extend lifespan of older platforms, yet can introduce compatibility issues.

Risk Assessment

Threat model, vulnerability analysis

Evaluating potential hazards associated with an interface. Conducting risk assessments informs security controls, though predicting user behavior remains challenging.

Rollover Effect

Hover state, visual cue

A change in appearance when a pointer rests over an element. Rollover effects signal interactivity, but may be invisible on touch-only devices.

Scalability

Horizontal scaling, load distribution

Ability of a system to handle increased demand. Scalable interfaces maintain performance under growth, yet require modular architecture.

Screen Real Estate

Viewport, layout density

The amount of usable space on a display. Efficient use of screen real estate enhances information density, but over-crowding reduces clarity.

Search Engine Optimization (SEO)

Metadata, keyword relevance

Techniques to improve visibility in search results. SEO considerations affect content structuring, yet must balance with user-centric design.

Segmentation (User)

Persona clustering, demographic grouping

Dividing users into distinct groups based on characteristics. Segmentation guides targeted design, though overly granular segments can complicate development.

Semantic Consistency

Terminology alignment, labeling standards

Using uniform language across an interface. Consistency aids comprehension, yet may require localization adjustments.

Service Design

Touchpoints, journey mapping

Planning and organizing a service's components to improve user experience. Service design extends beyond UI, encompassing backend processes and support channels.

Shadow DOM

Encapsulation, web components

A browser feature that isolates component styles and markup. Shadow DOM prevents style leakage, but can increase debugging complexity.

Signal-to-Noise Ratio

Data quality, error margin

Measure of useful information relative to background interference. High signal-to-noise improves accuracy of sensor-based inputs, such as eye-tracking.

Single-Sign-On (SSO)

Federated identity, authentication token

Allows users to access multiple applications with one credential set. SSO simplifies login, yet centralizes risk if compromised.

Skin Conductance Response (SCR)

Electrodermal activity, arousal indicator

A physiological metric reflecting emotional arousal. SCR can trigger adaptive UI changes, but requires careful interpretation to avoid false triggers.

Social Presence

Avatar realism, telepresence

Feeling of being together with others in a virtual environment. Enhancing social presence improves collaboration, yet may increase expectations for realism.

Software Development Kit (SDK)

API collection, developer tools

A set of tools for building applications on a platform. SDKs accelerate development, but must be kept up-to-date to avoid security gaps.

Spatial Interaction

3D gestures, room-scale tracking

User input based on physical space, such as moving hands in VR. Spatial interaction fosters immersion, yet requires precise tracking hardware.

Spontaneous Interaction

Unprompted engagement, opportunistic use

User actions taken without prior prompting, like discovering a hidden shortcut. Designing for spontaneity can delight, but risks inconsistent discoverability.

Stakeholder Analysis

Interest mapping, influence diagram

Identifying individuals or groups affected by a design. Understanding stakeholder priorities guides requirement gathering, though conflicting interests may arise.

State Diagram

Finite state machine, transition graph

Visual representation of possible states and transitions. State diagrams help model complex UI flows, ensuring all scenarios are accounted for.

Sticky Navigation

Fixed header, persistent menu

A navigation element that remains visible as users scroll. Sticky navigation improves access, yet can consume valuable screen space.

Storyboarding

Scenario illustration, narrative flow

Visual sequence depicting user interactions over time. Storyboards convey context, aiding communication among design teams.

Substance Abuse Detection (HCI)

Behavioral analytics, risk scoring

Using interaction patterns to identify potential substance misuse. Early detection can inform interventions, yet raises ethical considerations regarding data use.

Superuser Mode

Admin privileges, elevated access

A configuration granting advanced capabilities. Providing a superuser mode enables expert tasks, but must be protected to prevent accidental system changes.

Synchronous Interaction

Real-time feedback, immediate response

Communication where actions and responses occur simultaneously, such as live chat. Synchronous designs enhance engagement, but depend on network reliability.

System Usability Scale (SUS)

Standardized questionnaire, score interpretation

A ten-item survey measuring perceived usability. SUS offers quick benchmarking, yet does not capture task-specific nuances.

Task Analysis

Hierarchical decomposition, workflow mapping

Breaking down user activities into constituent steps. Task analysis uncovers hidden requirements, facilitating targeted design improvements.

Telemetry

Usage data, remote monitoring

Automatic collection of operational metrics. Telemetry informs product updates, but must respect user consent and data privacy.

Touch Target Size

Finger ergonomics, minimum dimensions

Recommended area for interactive elements to accommodate finger taps. Adequate target size reduces missed taps, especially on small screens.

Touchless Interaction

Air gestures, proximity sensors

Control without physical contact, often using hand waves. Touchless designs support hygiene, yet may suffer from false detections.

Transparency (UI)

Opacity, visual hierarchy

Use of see-through elements to reveal underlying content. Transparency can create depth, but excessive use reduces legibility.

Trend Analysis

Time-series, pattern recognition

Examining data over periods to identify shifts. Trend analysis helps anticipate user needs, yet requires sufficient data volume.

Trust Calibration

Confidence levels, reliability cues

Adjusting user trust based on system performance. Providing confidence scores can aid calibration, but must avoid overpromising.

Usability Testing

Think-aloud protocol, task success rate

Observing real users as they interact with a prototype. Testing uncovers practical issues, though sample size influences result generalizability.

User Journey Map

Touchpoints, emotional states

A visual narrative of a user's experience across interactions. Journey maps reveal pain points, guiding holistic improvements.

User Modeling

Persona, behavior simulation

Creating representations of user characteristics for prediction. Accurate models support personalization, yet must be regularly updated.

User-Generated Content (UGC)

Reviews, comments

Content created by end-users within a platform. UGC enriches community, but moderation is required to prevent misuse.

Virtual Reality (VR)

Head-mounted display, immersive environment

A simulated three-dimensional space experienced through specialized hardware. VR enables realistic training, yet motion sickness can limit session length.

Voice User Interface (VUI)

Speech recognition, spoken feedback

Interaction through spoken language. VUIs enable hands-free use, but must handle accents and background noise.

Walkthrough (Design)

Guided tour, feature highlight

An interactive guide that introduces users to key functions. Walkthroughs reduce onboarding time, yet should be skippable for experienced users.

Web Accessibility Initiative (WAI)

WCAG, inclusive design

A W3C project establishing web accessibility standards. Adhering to WAI guidelines improves inclusivity, though implementation can be resource-intensive.

Web of Things (WoT)

Semantic interoperability, device description

Extending the Internet of Things with web standards. WoT enables unified control of heterogeneous devices, yet security across diverse endpoints must be assured.

Weight of Evidence

Bayesian inference, confidence metric

Aggregating multiple indicators to assess a hypothesis. In HCI, weight of evidence can support decision-making about design changes.

White Space

Negative space, layout breathing room

Unfilled areas that separate content. Effective use of white space improves readability, while crowded layouts hinder focus.

WIMP Interface

Windows, icons, menus, pointer

Traditional desktop interaction paradigm. Understanding WIMP conventions aids transition to newer models, though it may limit innovation.