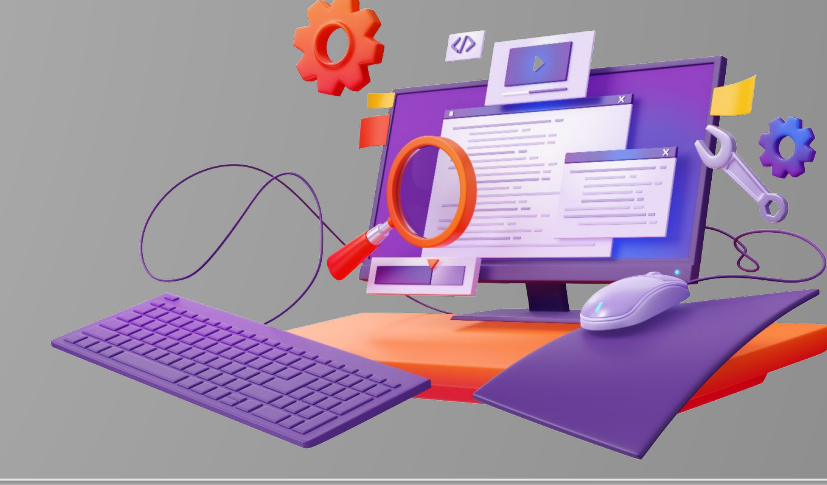


Affinder: Expressing Concepts of Situations that Afford Activities using Context-Detectors



Authors: Ryan Louie, Darren Gergle, Haoqi Zhang

01

Background

- With context-detectors like time, place, and weather, Affinder assists designers in expressing human situations.
- Translates human actions into machine-readable context characteristics for applications that are aware of context.
- Developing solutions to close the knowledge gap between human and machine-readable data is a major problem for context-aware applications in HCI.

02

Methodology

- Using a block-based programming environment, Affinder enables designers to combine context features to visually generate scenarios.

Fundamental Instruments:

- Unlimited Vocabulary Search: Locates pertinent contextual elements. Encourages designers to consider their ideas more carefully by providing reflection prompts.
- Repair & Simulation Tools: Identifies problems and simulates the scenario. In a comparative research, Affinder and a baseline tool with restricted capability were used by users to express human situations.

03

Results

- Comparing Affinder users' creations to the basic tool, they were richer and more complicated.
- Vocabulary searches and reflection questions assisted users in developing their original concepts.
- Performance: Using Affinder significantly increased the scope and correctness of the expressed scenarios.

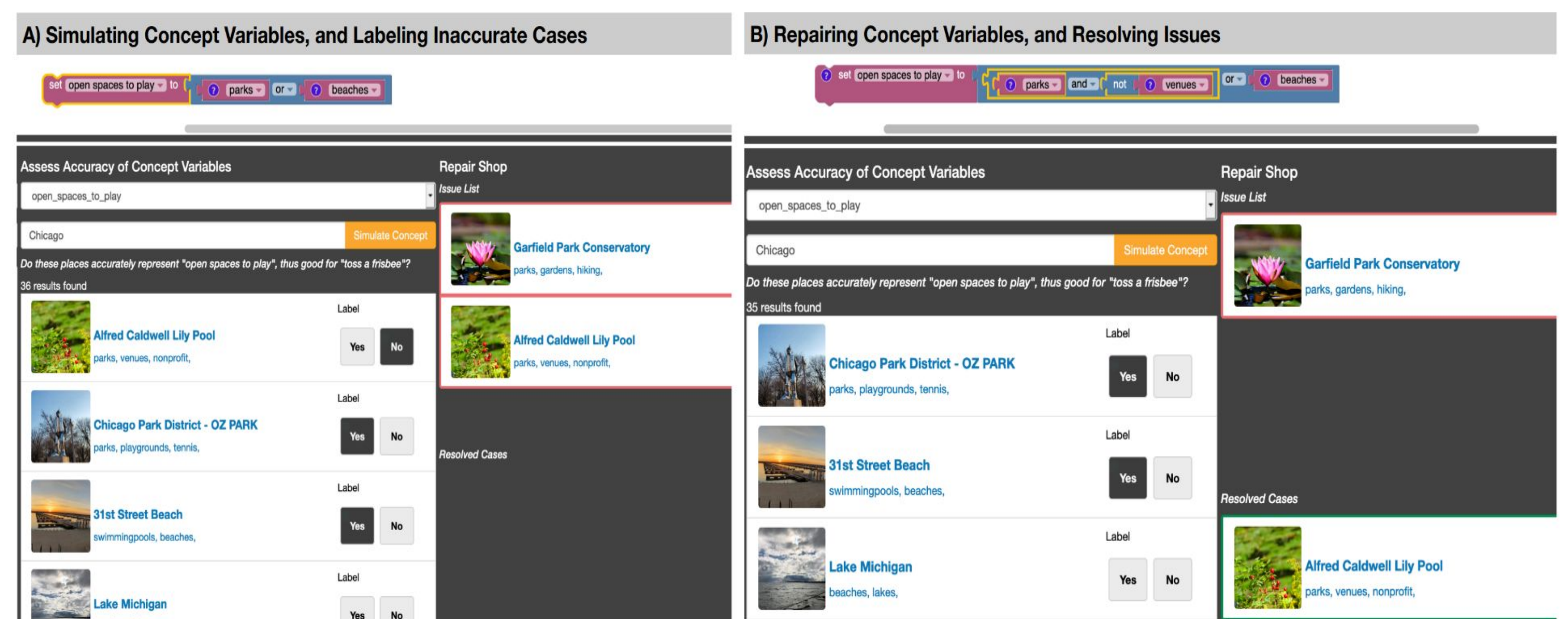


Figure 5: Designers use Affinder's simulation and repair tools to refine concept expressions. The tool allows for the identification of inaccurate context features (e.g., parks that are not suitable for playing) and enables users to adjust and repair these expressions, ensuring more accurate and contextually appropriate results.

04

Discussion

- **Consequences:** Affinder could enhance the way context-aware applications are created in fields including AI-powered decision-making systems, smart cities, and personalized healthcare.
- **Limitations:** Users experienced difficulties with overscoping (identifying an excessive number of useless elements) and underscoping (not recognizing enough useful features). Affinder's effectiveness might be increased with more development of tools like simulation and reflection.

05

Conclusion

- By bridging the gap between human actions and machine-readable context elements, Affinder assists designers in improving the design of systems that are aware of their surroundings.
- **Future promise:** Affinder offers a great deal of promise to advance AI applications, smart city systems, and other domains that call for context-aware decision making.



Challenges of Moderating Social Virtual Reality



Authors: Nazanin Sabri, Bella Chen, Annabelle Teoh, Steven P. Dow, Kristen Vaccaro, Mai ElSherief

1

BACKGROUND



- Avatars, speech, and gestures are used by users to engage in immersive settings on virtual reality (VR) platforms including AltspaceVR, Horizon Worlds, and Rec Room.
- Social VR produces ephemeral interactions, which means that once the conversation or activity finishes, it disappears, in contrast to regular social media, where posts can be examined after they are published. This presents content moderators with a new obstacle.
- In social VR, where avatars interact in **real time** and it is difficult for current moderation methods to monitor or handle hazardous behavior, this study examines the problems associated with content moderation.

The goal is to find new, dangerous behaviors that are specific to virtual reality and investigate the shortcomings of the moderation techniques in use today.

2

METHODOLOGY



- **Field Research:** On AltspaceVR, Horizon Worlds, and Rec Room, the researchers saw 100 planned events. They listed negative actions as making loud noises, harassing others, following them, and even inflicting bodily injury (like smacking avatars).
- **Interviews :** To learn more about the moderators' experiences in real-time handling of harmful activity, the team spoke with 11 moderators from various sites. From platform volunteers to more seasoned official moderators, the moderators represented a variety of professions.
- **Mixed-Methods Approach :** The researchers evaluated the kinds of harm that transpire and the efficacy of moderating instruments by fusing qualitative interviews with real-world event observation.

The moderators also talked about the difficulties they have because VR settings are dynamic and fragmented, including issues with visibility and tools.

3

RESULTS



Platform	Observed Events	Events With Harmful Behaviors	Harmful behaviors (moderator addresses problem)	Harmful behaviors (no moderator)	Harmful behaviors (moderator present but no action)
AltspaceVR	45	9	8	1	0
Horizon Worlds	25	12	2	8	2
Rec Room	30	24	4	13	7
Total	100	45 (45%)	14	22 (49%)	9

Moreover, 13 different detrimental behaviors were found, including:

- **Disruptive noise :** When people purposely disrupt others or make loud noises during events.
- **Harassing language :** Use of insults or derogatory comments targeted at specific users.
- **Stalking avatars :** Replication of real-life stalking tendencies, users follow other avatars about in virtual worlds in a persistent manner.
- **Simulated physical harm :** VR-specific actions that resemble real-world violence, such as slapping or pushing avatars.

4

DISCUSSION



The transient nature of virtual reality interactions means that standard moderating methods, such as going over flagged posts, are useless because there is no permanent record of an event or conversation. In VR, moderators encounter particular difficulties like:

- **Restricted hearing and vision :** Moderators are only able to listen in on adjacent talks thanks to spatial audio, missing situations elsewhere.
- **Absence of real-time response tools :** When methods such as user removal or muting are not available quickly enough, harm can continue.
- **Fragmented environments:** Users can relocate to secret locations where hazardous activity goes undiscovered in large virtual worlds, making it difficult to follow them.

In order to effectively minimize injury, the study recommends proactive moderation measures for VR as opposed to reactive ones.

5

CONCLUSION



- Due to interactions on social VR being **immediate** and **fleeting**, there are special content moderation challenges that do not arise on traditional platforms.
- The real-time, immersive nature of these interactions is beyond the capabilities of the moderation tools available on current VR systems.
- The creation of new moderation technologies that enable moderators to more effectively observe, hear, and react to harmful behavior as it occurs is obviously necessary. This might include **platform redesigns** to increase moderator visibility or AI-based systems for automatically identifying hazardous interactions.
- Future Work: The research recommends **proactive tactics** and **enhanced platform designs** to help moderators stop negative behaviors before they get out of hand.



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SCAN ME

Reading Between the Lines: Modeling User Behavior and Costs in AI-Assisted Programming

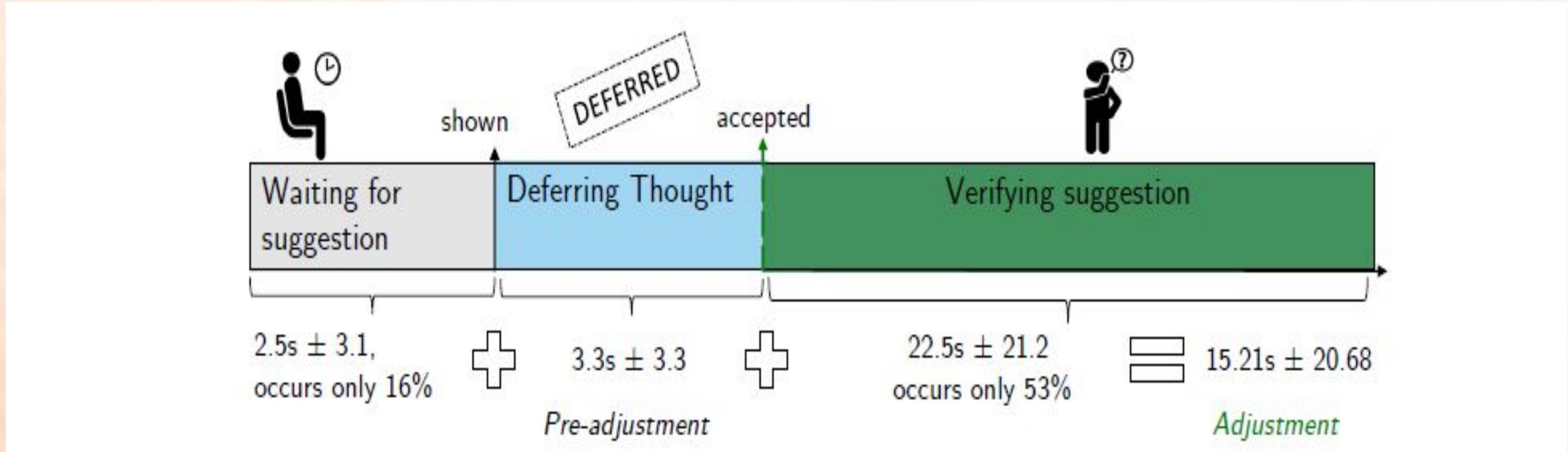
Authors: Hussein Mozannar (MIT), Gagan Bansal, Adam Fourney, Eric Horvitz (Microsoft Research)

Background

- ❖ Exploration of how code-recommendation systems like GitHub Copilot impact programmer productivity and behavior.
- ❖ By studying the interactions of programmers, the researchers developed a taxonomy that categorizes common activities programmers engage in when using AI-powered code suggestion tools.
- ❖ The study provides insights into the inefficiencies and time costs associated with verifying and editing AI-generated suggestions, contributing to the understanding of human-AI collaboration in software development.

Results

- Programmers spend 22.4% of session time verifying suggestions.
- AI suggestions often cause inefficiencies when verification is deferred.




Conclusion

- ❖ The study provides valuable insights into how AI-human interactions unfold during coding sessions, particularly with AI-powered tools like GitHub Copilot. By analyzing programmers' behaviors, the research reveals the various ways developers engage with AI-generated suggestions, and how these interactions impact their workflow. One key finding is that developers don't just passively accept suggestions; they actively verify, edit, and sometimes defer thoughts on AI-generated code, highlighting the cognitive effort involved in using these tools.
- ❖ The study introduces the CUPS (CodeRec User Programming States) taxonomy, which breaks down coding activities such as prompt crafting, debugging, and suggestion verification, providing a detailed view of how AI can aid or hinder productivity. These insights are crucial for understanding the balance between AI assistance and human decision-making, as they point to areas where AI tools can be refined to better support programmers without disrupting their natural flow. Ultimately, the study underscores the need for AI systems that not only generate useful code but also integrate seamlessly with the programmer's cognitive process and workflow.

Methodology

1. User study with 21 programmers interacting with GitHub Copilot.
2. Participants labeled their actions using the CUPS taxonomy after coding sessions.
3. Collected data on states like prompt crafting, editing, and verifying suggestions.

Discussion

- AI-assisted tools like Copilot  can enhance productivity, but better integration with workflows is needed.
- AI-assisted tools like GitHub Copilot have the potential to significantly enhance developer productivity by providing real-time code suggestions, auto-completions, and even full-function implementations based on prompts. These tools can reduce the time spent on repetitive tasks, help developers explore unfamiliar programming concepts, and lower the cognitive load involved in writing boilerplate code.



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