Exploring No Script Storytelling: A Dynamic Approach to Player-Driven Narratives

This paper introduces **No Script Storytelling (NSS),** a framework for dynamically generating and adapting narratives around players' actions, integrated with **Generative Storylets (GS)** to create emergent, player-driven narratives in interactive media. Inspired by James Carse's concept of **Finite and Infinite Games,** which celebrates unpredictability and open-ended play, NSS reimagines narrative experiences as unscripted and continuously adaptive. Rooted in the spontaneity of improvisational theater, where actors craft ephemeral, responsive stories, and Emily Short's concept of storylets, NSS emphasizes modular storytelling's potential for dynamic progression. Drawing heavily from Mateas and Stern's **Façade,** NSS extends its AI-driven interactive drama principles—dynamic character interactions, player agency, and real-time storytelling—into a generative narrative framework. NSS and GS thus provide a structure where narratives evolve dynamically in response to player actions and contextual triggers, offering unprecedented freedom and adaptability.

At the heart of NSS lies a paradigm shift in narrative creation. Built on Carse's **Infinite Games philosophy,** NSS envisions storytelling as an evolving, player-centered process where narratives emerge in real time from player actions rather than following predetermined paths. Drawing from the immediacy of improvisational theater and Façade's player-driven real-time dialogue, NSS expands these principles to entire worlds and narrative systems. It avoids linear, pre-written scripts, instead leveraging AI-driven real-time generation to craft personalized, expansive experiences. NSS transforms storytelling into a fluid, participatory process that emphasizes the player's role as an active co-creator of the narrative.

Generative Storylets (GS), NSS's core component, redefines Emily Short's concept of modular, conditional-driven story units. In NSS, GS transforms storylets into adaptive, real-time elements that dynamically respond to player actions and the world state. Each storylet acts as a living system, interacting with other storylets and evolving to maintain coherence and immersion. This integration preserves NSS's improvisational ethos while enabling emergent storytelling shaped by player agency, ensuring no two narratives are identical. By aligning player actions with dynamic narrative generation, GS allows NSS to deliver rich, deeply engaging experiences.

The implications of NSS and GS are profound for interactive storytelling. By eliminating pre-scripted rigidity, these systems empower players to shape their journeys within living worlds where stories are actively lived, not just told. NSS generates narratives in real time, fostering spontaneity and immersion reminiscent of improvisational theater. Unlike traditional branching narratives, NSS and GS ensure that every action carries weight, dynamically influencing narrative progression. A **ChatGPT-powered prototype, inspired by Façade,** illustrates the innovation's impact: stories emerge from the interplay between player agency and systemic adaptability, creating emotionally resonant and deeply personal experiences.

The integration of **artificial intelligence (A.I.)** within NSS-GS frameworks unlocks further potential. In the current prototype, A.I. acts as a dynamic controller, adapting storylets in real time to maintain narrative coherence and fluidity. Looking forward, A.I. could serve as a central world architect, orchestrating evolving characters, emergent events, and interconnected world states. Future narrative systems might harness advancements in **natural language processing** and **machine learning** to enable collaborative, globally adaptive storytelling. This vision aligns with Janet Murray's **Hamlet on the Holodeck,** which imagines immersive, ever-evolving narratives that resonate deeply with participants.

The exploration of NSS and GS fundamentally reshapes how narratives are conceived and experienced. By placing player agency at the center, these frameworks transcend branching structures to deliver emergent, adaptive storytelling. Early prototypes highlight this approach's transformative potential, enabling stories to emerge from the interplay between player intent and systemic response. In these living worlds, the boundaries between storyteller and audience dissolve, granting players unparalleled authorship.

From a design perspective, NSS-GS represents a philosophical reimagining of narrative—a shift from static plots to ecosystems of possibility. This framework addresses long-standing challenges in interactive storytelling, such as balancing freedom with coherence. As a replicable methodology, NSS-GS offers a manifesto for adaptive storytelling, providing a blueprint for future advancements in the field.

These findings are an invitation to explore new horizons. By reshaping the relationship between agency and narrative, NSS and GS open pathways for applications beyond gaming—from immersive education to collaborative storytelling platforms. This evolution in interactive storytelling invites us to envision narratives that adapt, evolve, and resonate in ways only beginning to be understood.

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Author’s Statement

Mengfan Huang is a second-year master’s student at Keio University’s Graduate School of Media Design and an alumnus of the NYU Game Center. With a strong background in game design, his research explores the future of interactive narratives, focusing on audience-driven storytelling systems that emphasize player agency and dynamic adaptability. Inspired by improvisational theater, AI-driven generative systems, and modular storytelling frameworks, his work aims to create narrative systems that offer players complete freedom while maintaining coherence. As an ongoing project, Mengfan has presented his research at academic forums and industry workshops, contributing to discussions on the evolution of storytelling in games and its broader applications. His goal is to push the boundaries of unscripted storytelling, redefining how players interact with narrative worlds in interactive media.

Challenges and Opportunities to Narrative Player Agency in Interactive Storytelling

Brent Van Mol

Player choice in interactive storytelling is compelling as it offers individuals the possibility to exert control and actively shape narratives without the arduous task of crafting an entire story themselves (Smed et al., 3). By adapting everyday decision-making to the digital realm, video games offer players a sense of agency through their actions. On the gameplay side, this form of player agency grants players options such as weapon variety, divergent paths to follow, or alternative ways to approach enemy encounters. On the narrative side, agency manifests through dialogue choices, interacting with certain NPCs (non-playable characters), while ignoring others, and branching storylines that evolve based on the player's decisions.

I define narrative player agency as a player's capacity to exercise freedom of action resulting in permanent changes within a video game narrative. This definition underpins my ongoing investigation into developing a Narrative Player Agency Framework (NPAF). While narrative player agency enables unique story developments based on player choice, it is shaped by several critical factors, which I identify as five key challenges to agency: failure, death, difficulty, sustainability, and constraints.

1. Failure – Drawing on Juul's paradox of failure (2013), I argue that failure and agency are not diametrically opposed concepts. For instance, players may sometimes fail intentionally to explore new narrative paths or outcomes.

2. Death – While dying may halt narrative progress by resetting the game and its story to an earlier point, some games integrate death as a narrative mechanic, transforming it into a tool for story progression.

3. Difficulty – Here, difficulty refers not to combat or gameplay challenges, but to the complexity of piercing together fragmented story elements. This aligns with the concept of narrative puzzles (Wei & Durango, 2019).

4. Sustainability – Creating expansive, dynamic worlds with interconnected narratives and player-driven choices requires significant resources. Even the largest AAA studios struggle with the increasing budgets of video games, posing challenges for smaller to medium sized developers. Nonetheless, game developers are exploring and implementing ways to sustainably adapt their narrative structures to dynamic, player-driven choices.

5. Constraints – While player choice is ultimately limited by the developers, I argue that this does not diminish player agency. On the contrary, they can guide meaningful decision-making within a narrative framework.

In this presentation, I will explain how video games adapt and gamify our everyday decision-making by outlining the NPAF. I will briefly overview the five key challenges to narrative player agency, with a focus on the challenge of failure through a case study of a narrative-driven game. This exploration highlights how narrative player agency and its challenges present both obstacles and opportunities for video game narratives. As my research is still in its early stages, I look forward to engaging with fellow scholars for feedback and insights to refine and expand these ideas.

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Author Statement

Brent Van Mol recently graduated from the University of Antwerp and focuses on narratology, game studies and empirical video game research. He is currently writing a PhD application for a joint PhD position on the challenges to narrative player agency and current trends at the University of Antwerp (Supervisor Dr. Steven Malliet) and Ghent University (supervisor Prof. Marco Caracciolo) to be approved for funding. He presented his research “Player Choice in the Underworld: An Investigation of Narrative Player Agency, Death and Failure in Hades and The Forgotten City” in June 2024 at the University of Bristol’s New Directions in Classics, Gaming, and Extended Reality conference.

“It’s Dangerous to Go Alone, Take This!”: Adapting a Model of Player Experience for Interactive Digital Narratives

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1 EXTENDED ABSTRACT

Interactive Digital Narratives (IDNs) are narrative forms implemented in digital systems where an audience influences a narrative’s progress, perspective, content, and/or outcome [4]. Its design process strives to create a specific interactor experience, combining the aesthetic qualities of the medium (i.e., immersion, agency, transformation, kaleidoscopic) by taking advantage of its affordances (i.e., procedural, participatory, spatial, encyclopedic) [4, 6]. To forward our knowledge of IDN design, we must leverage existing knowledge about the digital medium and how to create experiences in them.

Game designers have a wealth of knowledge about creating experiences. Rather than simply making “good” or “fun” games [5], they strive to create specific player experiences [8]. *Player Experience (PX)* describes the qualities of player-game interactions enabling individual and personal play experiences [11]. It is an emergent phenomenon with emotional, cognitive, and social components resulting from interactions between designed game elements, player perceptions, and spatial, temporal, social, and cultural context [2, 7] (Figure 1). PX relies on “immersion” in the game’s representational space (e.g., “Magic Circle”) and meaningful play that relies on players’ ability to make meaningful choices and understand a system’s emergent complexity [8], which aligns with the digital medium’s aesthetic qualities. We can identify three components impacting PX [1, 3]:

- Fantasy describes who the player is, defined by their in-game role;

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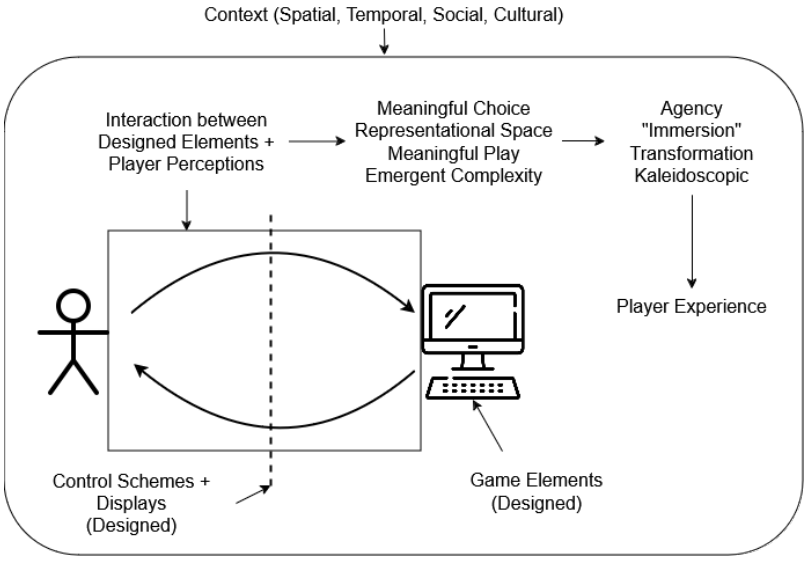

Fig. 1. Player Experience (PX) in an interactive system

- Experience concerns what the player is doing in the capacity of their assigned role, focused by a goal/objective[1]; and
- Feelings that players have while playing, encompassing emotions and mental states, engaged by the dramatic elements/context of the game.

For example, in *The Legend of Zelda: Echoes of Wisdom* (2024) [G1] the: fantasy is to be the powerful magic-wielder Princess Zelda; experience is to save Hyrule and its people from the Still World by rescuing them and sealing rifts; and feelings include cleverness, determination, and triumph. These work together to create the overarching PX of "Be Princess Zelda, blessed by the Goddesses of Hyrule, and experience her triumph as she saves Hyrule from the Still World using the magical Tri Rod with determination and cleverness". The weight that each component has differs between games and tends to align with (e.g. the fantasy in *Chess* is to be a military commander, but many players do not approach it that way).

We can relate these components to the affordances of the digital medium: Fantasy and Experience rely on its participatory nature (i.e. donning a mask and role-playing with a goal to focus their participation in an immersive world [6]); Feelings relies on its spatial and encyclopedic ones. A game's Formal Elements, its rules and objectives (i.e., its mechanical aspects) and rely on the procedural nature of game systems, form its structure that support PX components.

Abstracting away the game specific elements, PX offers a model about the emergency of the digital medium's aesthetic qualities from user-system interactions (Figure 2). We can also see that changing the context from *game* to *IDN* and *player* to *interactor* does not change the definition or intent of PX or any of its underlying components. This suggests that reframing PX for IDN design yields a useful tool for defining the intended Interactor Experience (IX) to use as a "lodestone" for making cohesive design decisions (Figure 3). For example, simplifying an IDN's mechanical aspects moves its emotional experience, gained from story and characters, to the fore so that it dominates the overall experience [9]. However, IDN designers should not entirely discount the mechanical design because it effectively

[1]Including player-defined goals.

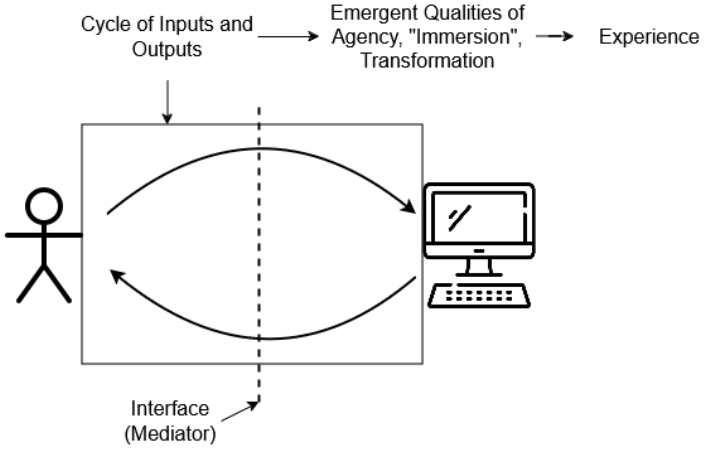

Fig. 2. Aesthetic qualities emerging from an interactive system that create an experience

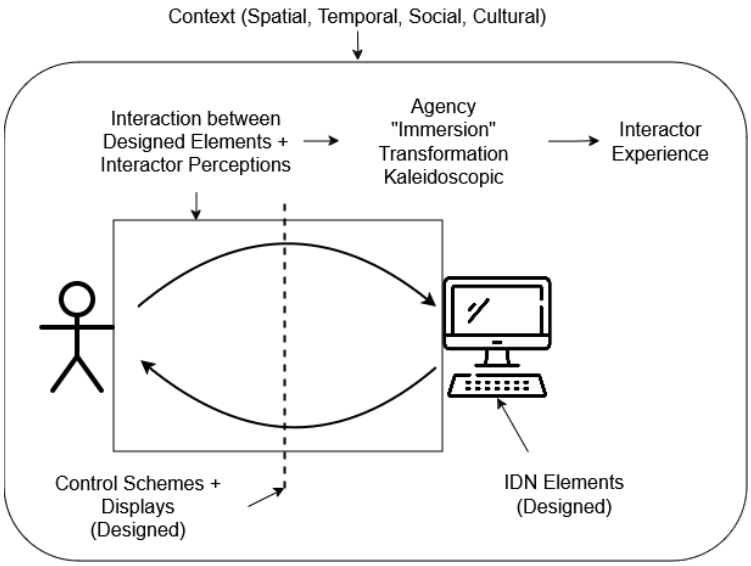

Fig. 3. Interactor Experience with IDN

determines what interactors can do with an IDN and how, which impacts how they behave and consequently feel about and take away from their experience [10].

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2 AUTHOR STATEMENT

Geneva M. Smith is a postdoctoral scholar at the University of Waterloo in the Faculties of Arts and Engineering. Her research focuses on developing knowledge for Interactive Digital Narrative (IDN) development to make it a viable option for storytellers, journalists, educators, and developers to create and share their stories. This includes finding story patterns that support interactions with programmed systems; interaction design patterns that support learning; and ways to evaluate an individual's understanding of stories and the issues they present. She received her Ph.D. in Software Engineering from McMaster in 2023. There, she worked in the G-ScalE Lab developing methods for improving the believability of video game characters—a critical story element—via the generation and expression of emotion. Her publications and presentations explore both the technical aspects of digital system design and their capacity to engage people in "conversations" where they co-create narratives through interactivity.

Too Long, Don't Want to Read: A Taxonomy for Adaptive Narrative Design in MMORPG Based on Player Engagement

DERRICK M. WANG, HILDA HADAN, and LENNART E. NACKE, Stratford School of Interaction Design and Business, University of Waterloo, Canada

Additional Key Words and Phrases: Game narrative, Transmedia storytelling, Narrative forms, Taxonomy, MMORPG, World of Warcraft, Survey study

Introduction. Massively Multiplayer Online Role-Playing Games (MMORPGs) blend multiplayer interactions with storytelling in vast virtual worlds [2, 8]. MMORPGs use fragmented narratives portrayed in forms such as cutscenes, quests, and dialogues, to present the game's overarching plot gradually throughout gameplay [12]. Some narrative components extend beyond the game itself into external media content, such as official novels and comics [5]. Literature shows that a well-articulated narrative experience improves players' intrinsic motivation and immersion [9, 10]. However, missing parts of the story can cause players' inconsistent narrative experience and diminished motivation and immersion. For instance, World of Warcraft's (WoW) story expansions received players' criticism for its incoherent narrative because a key character's main motives and rationales were only explained in an external novel rather than in-game, leaving players confused and frustrated[1]. In addition, despite the existence of various forms of in-game narratives, an official survey shows that players do not always consume them, given nearly 40% of players skip quest description texts [14]. This finding suggests a need to improve current narrative delivery methods to adapt to player preference and sustain player engagement [11]. To allow designers to adapt fragmented storytelling in ways that enhance player engagement and meet diverse player preferences, we must first gain a systematic understanding of different narrative forms and players' preferences for them. Thus, in this research, we answer the following research questions:

RQ1: How do players engage with different narrative forms?
RQ2: Why do players skip certain narrative forms?

Our research focused on WoW, one of the most famous and long-running MMORPGs [6]. WoW provides a rich environment for analyzing how and why players engage or avoid various in-game narrative forms. Our two-phase method involved (1) developing a narrative taxonomy based on literature [3] and WoW's game content, followed by (2) surveying players about their awareness, engagement, and preference. Our research contributes to furthering the understanding of adaptive narrative experience design by centreing it on the player experience and engagement of various narrative forms.

Methodology. To systematically explore players' perception and engagement, we developed a taxonomy of game narrative forms grounded in Domsch's narrative concepts [3]. We validated and expanded these concepts using narrative components from WoW. Guided by the literature, two researchers first classified WoW narrative components from the *wowhead.com* database[2]. One researcher with over 10-year experience in WoW then replayed all quests in two expansions, recorded and categorized all narrative events. The two researchers then collaboratively reviewed the narrative components and finalized a taxonomy of 11 narrative forms (see Figure 1) with three shared properties:

[1]This can be found in many discussions in WoW-related social media sites (e.g., [4, 7, 13]).
[2]Wowhead is the most comprehensive database for WoW recognized by the publisher, Blizzard Entertainment.

location (in or out of the game); timing (automatically presented during gameplay or require player action to activate); presentation (animated or textual).

We then conducted an online survey to explore players' awareness, engagement, and preference regarding these narrative forms. The questionnaire inquired about players' awareness of each narrative form, whether and why they typically consumed or skipped them, and if they use alternative sources to acquire missed information. Players also rated their preference for narrative forms in our taxonomy. With university ethics approval (#42757), we collected 87 valid responses from participants recruited through WoW-related social media groups. One researcher conducted descriptive analysis and analyzed open-ended responses using a reflexive thematic analysis method [1], drawing on their 10-year experience with WoW.

Findings and Discussion. Our results showed that players are aware of various narrative forms in and out of the game, and often make deliberate choices to engage with or skip them. Specifically, more than 80% of participants indicated that they would engage with animated, internal, and automatic narrative forms, such as in-game *cutscenes* and *auto-play voiced dialogues*. In contrast, textual, external, and manual narratives contents, such as *comics* and *novels*, showed low engagement, with less than 30% of participants engaging with them.

Participants indicated that external narrative forms, although offering an economic way to expand side stories, are best served as a supplement of the game narrative. As most players do not actively seek out narratives outside gameplay, our findings suggest that narrative design must adapt to this preference and allocate narrative based on the priority.

Our research contributes to the game narrative research community by (1) taking the first step at systematically categorizing narrative forms in MMORPGs through WoW, laying the theoretical foundation for future research; (2) providing empirical evidence of players' reception and preference for the various narrative forms in WoW that informs designers of fragmented narrative, and (3) suggesting possible recourse of adapting narrative for different preferences to ensure coherent narrative experiences for more players. We believe our taxonomy, validated with a popular MMORPG, and informative insights on player experience build a foundation for future work, and invite further validation and expansion of our work with other games.

Authors' Statement. Three authors contributed to this work. All authors are affiliated with the University of Waterloo. Derrick Wang is a Ph.D. student focusing on the social interaction in MMORPGs and its application in other game genres. This work was inspired by his experience with World of Warcraft and participation in its player community. Hilda Hadan is a Ph.D. candidate with extensive research experience on ethical design of MMORPGs (e.g., Genshin Impact). Dr. Lennart Nacke is a professor of the Stratford School of Interaction Design and Business at the University of Waterloo, and an expert on player experience.

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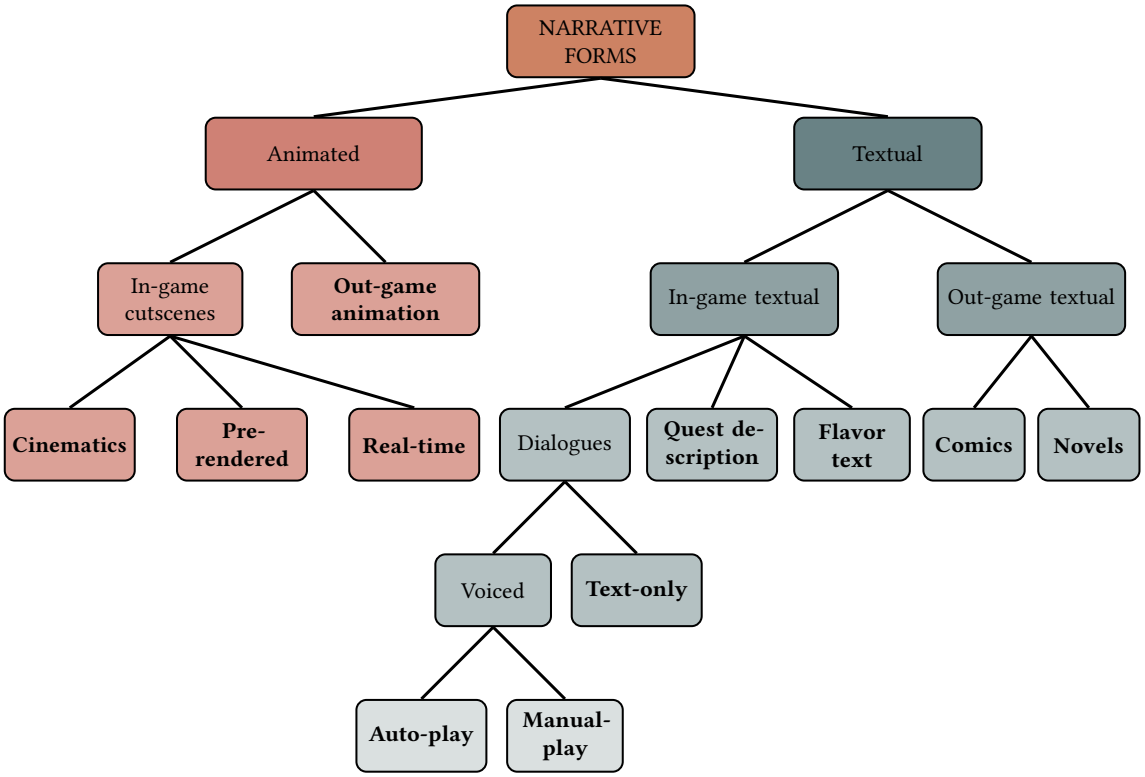

Fig. 1. Overview of the 11 narrative forms evaluated in the player survey.

Too Long, Don't Want to Read: A Taxonomy for Adaptive Narrative Design in MMORPG Based on Player Engagement

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Additional Key Words and Phrases: Game narrative, Transmedia storytelling, Narrative forms, Taxonomy, MMORPG, World of Warcraft, Survey study

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Hilda Hadan is a Ph.D. candidate in Systems Design Engineering at the University of Waterloo and a member of the Games Institute. Her research focuses on deceptive design in games and game-related technologies, user privacy and cybersecurity, and human factors in gamification. Since 2022, Hilda has dedicated her research on understanding and exposing manipulative design mechanics in games, including MMORPGs (e.g., Genshin Impact), and finding ethical and privacy-preserving alternative design solutions. She has published many research articles on these topics in leading venues for games and human-computer interaction research, including CHI, CHI PLAY, IJHCI, and CSUR.

Lennart Nacke is a full Professor and the Director of the HCI Games Group at the University of Waterloo's Games Institute. Professor Nacke teaches User Experience, Human-Computer Interaction, and Game Design at the University of Waterloo. Dr. Nacke is a pioneer in games, gamification, and user experience. He explores how user experience of video and exercise games can drive engagement, influence player psychology, and change human behaviours. Over the past 15 years, he has published more than 200 academic papers and a best-selling book on Games User Research.