"Pikachu would electrocute people who are misbehaving"

Expert, Guardian and Child Perspectives on Automated Embodied Moderators for Safeguarding Children in Social Virtual Reality

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Background

The publication is part of the CHI '24 Conference Proceedings on Human Factors in Computing Systems, published by the Association for Computing Machinery on May 11, 2024. The authors have extensive experience publishing with the ACM, with their contributions reflecting a strong academic background and research focus on human-computer interaction.

200
Publications Collectively

183
ACM Publications Collectively

Abstract

Explores perceived concerns, benefits, and preferences across stakeholder groups, gathering unique recommendations and reflections on AEM design.

Methodology

- Interviews with 16 experts in online child safety and psychology.
- Workshops with 8 guardians and 13 children.

Results

- Perceptions towards Automated moderation
- Perceptions towards embodiment
- Benefits, concerns and suggestions

Discussion

The study's reliance on English-speaking participants in the UK and a single session with children limits its global relevance and practicality. Future research should involve iterative co-design with children, adults, and experts for more balanced feedback. Expert insights were more detailed, though the online format constrained the VR experience. The "Big Buddy" example influenced participants' views but provided practical insights into AEMs.

Conclusion

The research focuses on developing Automated Enforcement Mechanisms (AEMs) to protect children in social VR, emphasizing the need for clear communication, adaptive responses to harassment, emotional support for victims, and offender accountability. It stresses the importance of tailoring AEMs to individual needs and calls for future interdisciplinary research to address both design and psychological challenges.

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THE UNIVERSITY OF THE WEST INDIES
AT ST. AUGUSTINE, TRINIDAD AND TOBAGO

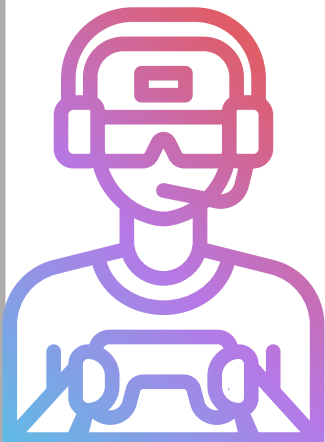# Gaming for Post-Work Recovery:
The Role of Immersion

AUTHORS

Jon Mella
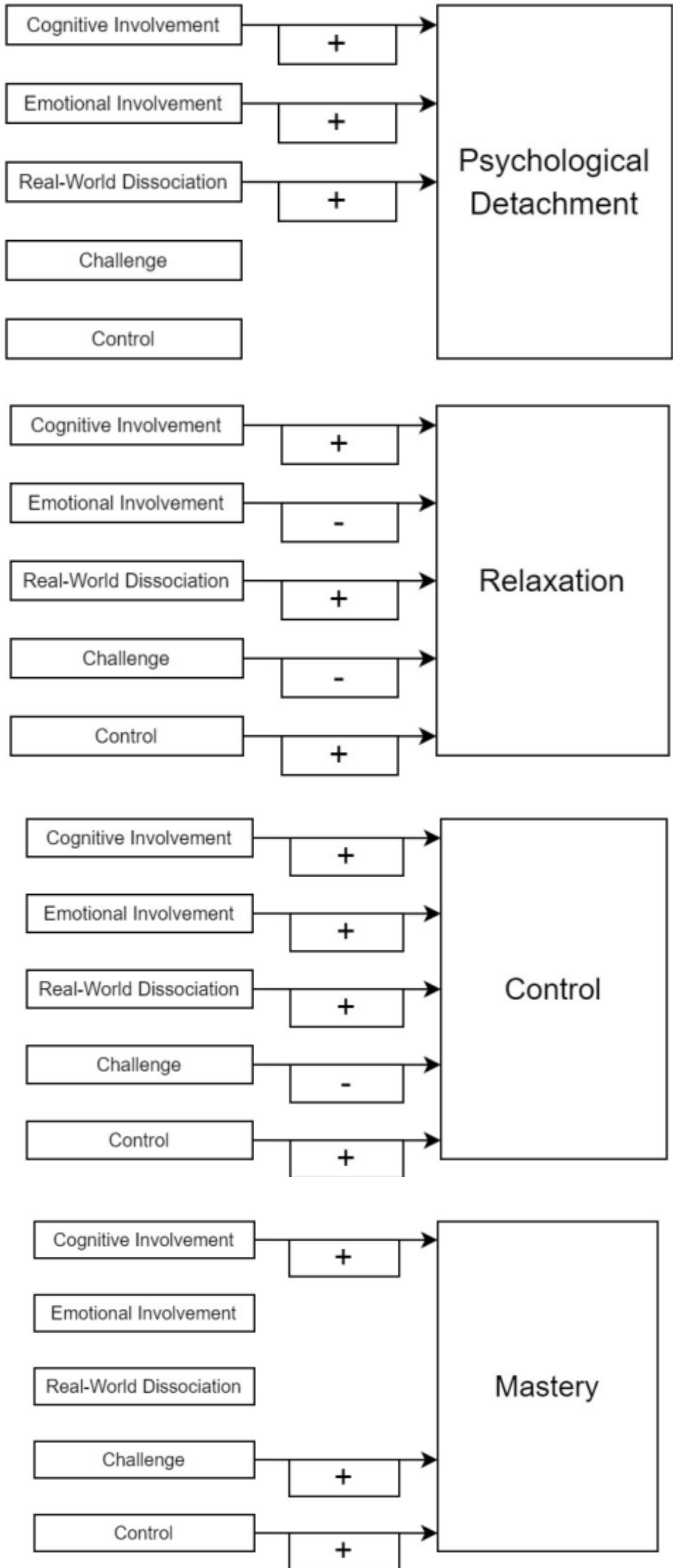Ionna Iacovides
Anna Cox

01. Abstract

- Digital games can help persons recover from work-related stress.
- Immersion is a crucial factor to increase the restorative effects of gaming.
- Different aspects of immersion can have different effects on the recovery needs after work.
- Aspects of immersion include cognitive involvement, emotional involvement, real-world dissociation, challenge and control.

02. Research Questions

- How does the player experience of immersion shape the post-work recovery potential of games?
- Which components of immersion when gaming after work are predictive of the four recovery experiences?
- Which components of immersion are predictive of overall post-work recovery experience?
- Which components of immersion are predictive of post-work energetic arousal?

03. Methodology

Participants (75) consisted of employed persons who had played a digital game within the last week.

- **Immersive Experience Questionnaire**
- **Recovery Experience Questionnaire**
- **Activation-Deactivation Checklist**

These questionnaires captured both quantitative and qualitative data for data processing.

04. Results & Findings

- Players optimized their game play to improve recovery by adjusting player settings.
- Cognitive Involvement helped players remain distracted from thinking about work.
- Challenge had no effect on any of the recovery experiences.
- Cognitive and emotional involvement were the significant predictors of overall recovery experience.
- Post-Work energetic arousal was only influenced by cognitive involvement.
- Control had no effect on any of the recovery experiences.
- Some players did not have a preference for immersion or recovery experience and simply played digital games for enjoyment even though it may not help their post-work recovery.
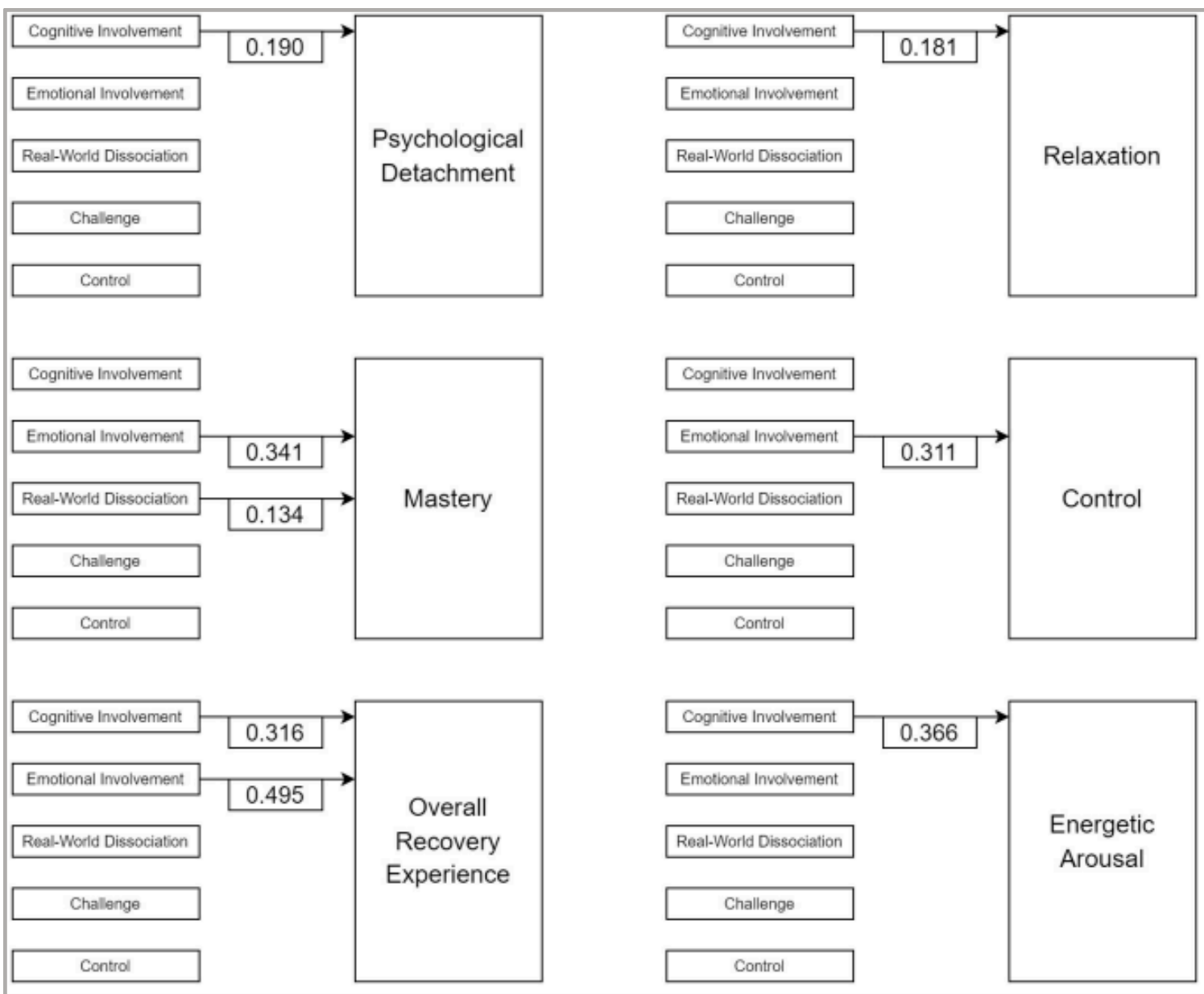
"I wanted to play a game from bed on my laptop rather than one that demanded me use a mouse. The relatively slow pace and simple controls of No Man's Sky made that viable."

05. Discussion

- Optimized Immersion through cognitive involvement improved psychological detachment as there was less room for work-related thoughts.
- The authors discussed the possibility of the results of this study being misused by employers to justify recommending or enforcing the use of games to recover from work.
- Limitations of this study included a male-dominated study sample, regression analysis' inability to establish a casual relationship between immersion and post-work recovery and the survey approach limited exploring the concept of immersion optimization in greater detail.
- Future research should focus on first-player perspective games as well as games that allow for immersion optimization (difficulty levels).

06. Conclusion

This mixed-methods study indicated that immersion in digital games is generally beneficially for the overall recovery experience and that the post-work recovery experience, can be improved by focusing on specific components of immersion, specifically cognitive involvement.

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TOWARDS COMPLETE ICON LABELING IN MOBILE APPLICATIONS

BY: JIESHAN CHEN • AMANDA SWEARNGIN • JASON WU • TITUS BARIK • JEFFREY NICHOLS • XIAOYI ZHANG

1 BACKGROUND

Featured at the CHI'22 Conference on Human Factors in Computing Systems, published by the Association for Computing Machinery (ACM), April 29, 2022

Researchers collectively produced 72 ACM publications, highlighting significant advancements and collaborative efforts within the field of Human-Computer Interaction

COMMON ICON

LONG-TAIL ICON
(LOW FREQUENCY ICON)

2 ABSTRACT

Icons play a vital role in mobile user interfaces but lack inherent accessibility, requiring developer-provided labels for assistive technologies.

While existing research improves recognition of frequent icons, current technologies struggle with rare icons. This work seeks to achieve broad coverage of both common and uncommon icons in real-world contexts.

3 Methodology

Crowdsourcing

Twenty-three annotators labeled a dataset of 327,879 icons, sourced from iOS app screenshots, using 90 predefined icon classifications. This process led to the discovery of 339 additional icon types

Clustering & Filtering

Icons excluded from the predefined dataset were processed using this developed method to further refine the dataset and analyze the properties of long-tail icons, leading to the development of the Prototypical Model for long-tail icons

Model Training (Image Classification Model)

During model training, a specific group of icons, represented at varying levels of abstraction, exhibited interpretative difficulties. This prompted the team to address the issue by introducing an Optical Character Recognition (OCR) API for enhanced accuracy

Model Training (Prototypical Model)

During model training, another group of icons—specifically compound icons ('modifiers')—presented interpretation challenges. This led the team to develop a variant of the Object Detection Model, known as the Modifier Identification Model, to address these issues.
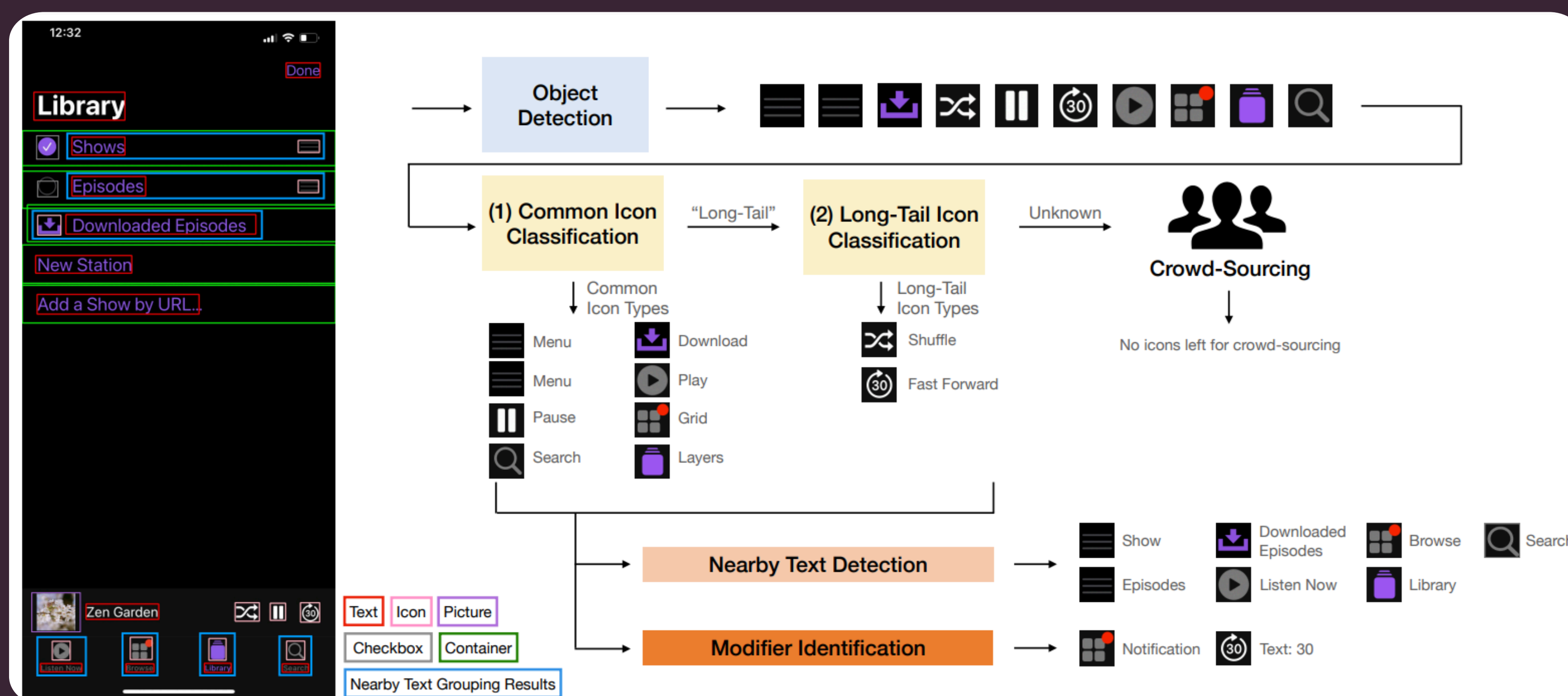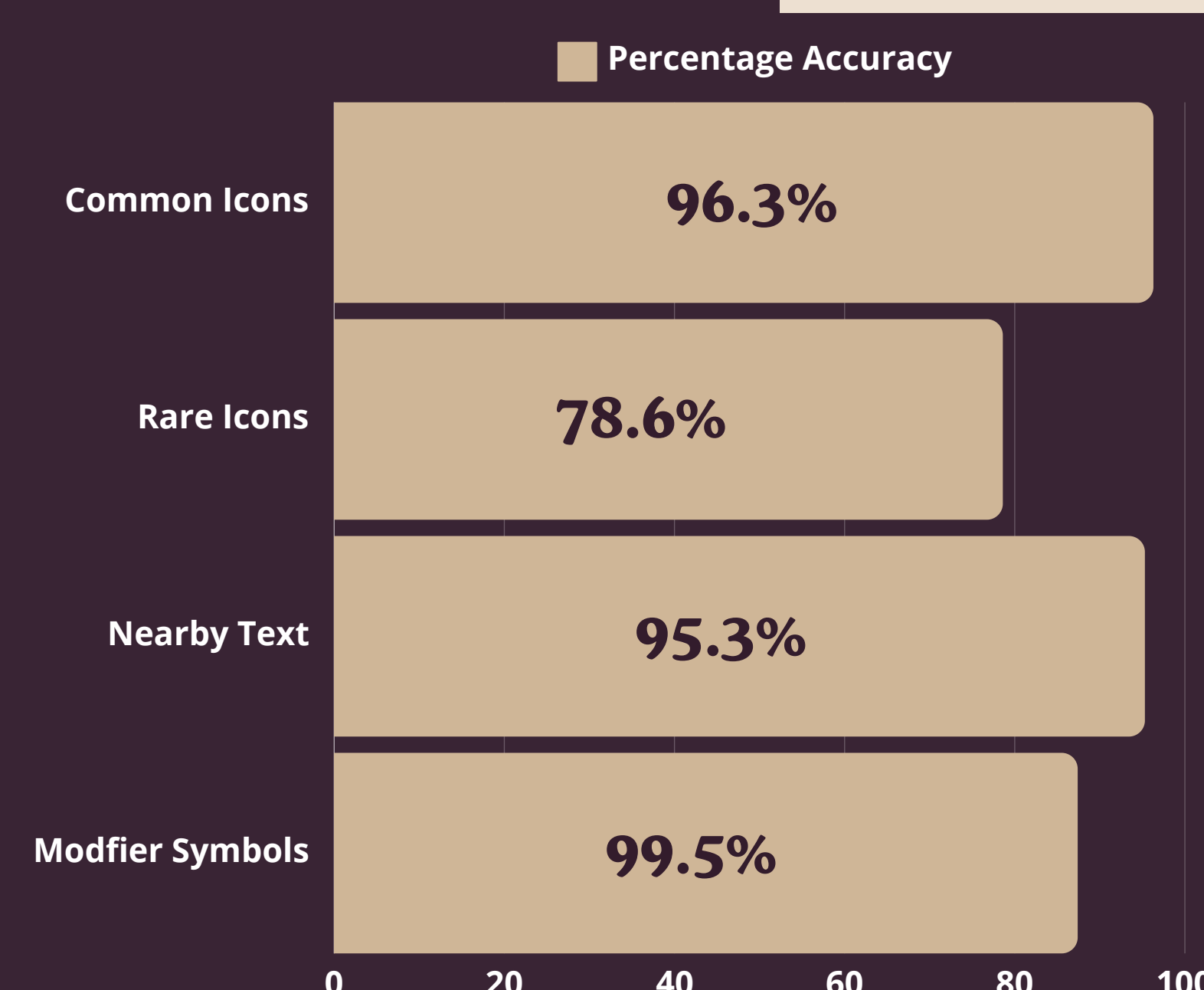

Figure Illustrating Flowchart of Proposed End-to-End Icon Classification System

4 Results

Percentage Accuracy

Category	Accuracy
Common Icons	96.3%
Rare Icons	78.6%
Nearby Text	95.3%
Modfier Symbols	99.5%

The system achieved 99.5% coverage of icons within the dataset, marking a substantial improvement over previous classification methods, which covered only 78%.

6 Discussion

Research findings enabled the team to tackle misclassification challenges by developing four key modules for their classification system: (1) Image Classification Model for common icons, (2) Prototypical Model for long-tail icons, (3) OCR Model, and (4) Modifier Identification Model (MIM) for enhanced labeling accuracy. By mainly relying on pixel information of icons this study helped significantly improved icon recognition and labeling, enabling the system to support accessibility features, natural language-based UI searches, and smoother interactions with conversational agents. The system addresses gaps in icon labeling, especially in minimalist designs and UI screenshots, providing broader coverage and enhanced user experiences

7 Conclusion

This research contributed significant improvement in icon classification by better recognizing both common and rare icons, enhancing various Human Computer Interaction (HCI) field such as screen reader support, UI based search accuracy, and virtual assistant interactions.

Research Team Affiliations

 Apple

The Australian National University

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