Reducing perceived waiting time through interactive loading screens – a method-comparative experimental evaluation

Thema:
> Reducing perceived waiting time through interactive loading screens – a method- comparative experimental evaluation

Art:
> BA

BetreuerIn:
> Johanna Bogon

BearbeiterIn:
> Simon Baierl

ErstgutachterIn:
> Niels Henze

ZweitgutachterIn:
> Johanna Bogon

Status:
> abgeschlossen

Stichworte:
> HCI, time, psychology

angelegt:
> 2022-06-22

Antrittsvortrag:
> 2022-07-11

Hintergrund

When interacting with a computer, waiting times will occur due to demanding processing tasks done by the machine. The duration of these waiting times can differ, based on the context they appear in. With the rising popularity of video games (Shanley, 2020), many people are confronted with average waiting times of up to 90 seconds (Veron et. Al, 2014). Existing studies show that longer waiting times can have a negative influence on the user (Nielsen, 1994). Reducing the perception of these times is the natural conclusion to enhance the user experience. Displaying a progress bar has proven to be an efficient way to achieve this (Myers, 1985), but new methods such as interactive loading screens can reduce the perceived waiting time of the user even further (Hohenstein et. al, 2016). Although, it is still unclear how combing these two methods would influence the users perceived waiting time. The way of measuring these perceived times can also make a difference in the result of a study. Telling subjects before the study that time will be a measured factor might influence them on keeping their focus on it during the experiment (Brown, 1997). Comparing the different methods of measuring perceived time in one study could provide information on which one suits that type of study the most.

Zielsetzung der Arbeit

This study aims to analyze the influence of interactive loading screens and loading bars in the context of gaming on the user's perception of time. It also compares different methods of measuring perceived time in human-computer-interaction to find out, which one is the most suitable for this task. The attentional gate model suggests that the more a user focuses of time, the slower the passing of time seems to them (Block & Zakay, 1996). Because of this, creating a distraction for the user can reduce their perceived waiting time. Applying this to a waiting situation in HCI, studies have proven this theory by implementing interactive loading screens and comparing them to non-interactive ones (Hohenstein et. al, 2016). Including a loading bar into an interactive loading screen should in theory make the users perceived time longer than excluding it. To test this, a study will be conducted where users will be presented different loading screens and asked for their perceived duration of these screens. To measure the subject's perceived duration, different methods can be used. It can be distinguished between measuring prospective- or retrospectively (Block & Zakay, 1997) and letting the user reproduce time or ask them for an estimation (Grondin, 2008). The study will also focus on the influence of these different methods on the result.

Konkrete Aufgaben

- Research on literature in the field of time perception in HCI and data collecting methods
- Designing and developing own loading screens
- Designing a study to collect data on time perception
- Conducting a lab-study
- Analyzing the results

Erwartete Vorkenntnisse

- Standard Methods in HCI
- Experience in Unity/C#
- Designing, conducting, and evaluating empirical studies

Weiterführende Quellen

- Block, R. and Zakay, D. Models of psychological time revisited. In In Helfrid H. (Ed.), Time and mind. Kirkland, WA: Hogrefe & Huber. 1996, 171–195.
- Block, R. A., & Zakay, D. (1997). Prospective and retrospective duration judgments: A meta-analytic review. Psychonomic bulletin & review, 4(2), 184-197.
- Brown, S. W. (1997). Attentional resources in timing: Interference effects in concurrent temporal and nontemporal working memory tasks. Perception & psychophysics, 59(7), 1118-1140.
- Grondin, S. (2008). Methods for studying psychological time. Psychology of time, 51-74
- Hohenstein, J., Khan, H., Canfield, K., Tung, S., & Perez Cano, R. (2016, May). Shorter wait times: the effects of various loading screens on perceived performance. In Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems (pp. 3084-3090).
- Myers, B. A. (1985). The importance of percent-done progress indicators for computer-human interfaces. ACM SIGCHI Bulletin, 16(4), 11-17.
- Nielsen, J.: Usability engineering. Elsevier (1994)
- Shanley, 2020 P. Shanley Gaming usage up 75 percent amid coronavirus outbreak, Verizon

reports https://www.hollywoodreporter.com/news/general-news/gaming usage-up-75-percent-coronavirus-outbreak-verizon-reports-1285140/

- Véron, M., Marin, O., & Monnet, S. (2014, March). Matchmaking in multi-player on line games: studying user traces to improve the user experience. In Proceedings of Network and Operating System Support on Digital Audio and Video Workshop (pp. 7- 12)

From:
https://wiki.mi.uni-r.de/ - **MI Wiki**

Permanent link:
https://wiki.mi.uni-r.de/arbeiten/evaluating_interactive_loading_screens

Last update: **23.10.2024 13:27**