

Exploring Self-induced Effects of Latency in First-Person-Shooters

Thema:

Exploring Self-induced Effects of Latency in First-Person-Shooters

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BA

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Hintergrund

Latency is the time-delay between an event and a noticeable effect. Latency in first-person shooters has negative impact on the game experience and the player performance[1]. High latencies have especially negative effects on players within high dynamic, fast-paced games such as Counter Strike: Global Offensive (CS:GO), making low reaction times and precise inputs increasingly difficult[2][3]. These studies have also shown, that the perception of latency can differ substantially, depending on your expertise [4]. The average difference before „noticeable interference“ due to latency was reported, was between 20-25ms, but had maximum differences of up to 50ms, making the perception of latency and its effects subjective to a certain degree. That leads to the question, whether all negative consequences of high latency are inherently present or whether players impose these consequences upon themselves? Other works have studied similar effects and it has been shown, that the expectation of higher technological features within a game, while not actually being implemented, can enhance the perception of the game[5]. As such priming-scenarios have apparent effects on the player, we will explore, whether the mere suggestion of high latency, while actually playing with low latency, is already enough to induce negative effects and put the player at a disadvantage, comparable to actually experiencing high latency. Finding those effects would show the overall importance of latency within the general gaming community as well as question the way latency is handled in games. Such self-induced, negative effects should discourage players from using latency displays or even encourage developers make latency displays more customisable. Instead of a simple show/hide-option, the player could set threshold from when the latency should be displayed as to be alerted when strong negative effects will become prevalent.

Zielsetzung der Arbeit

This paper explores what effects the display of high latency has on the player, while actually playing with low latency. To do so, we will explore potential objective effects including differences in accuracy or score as well as potential subjective effects, i.e. variances in joy of use. In order to invoke such self-induced negative effects, participants will play multiple games of CS:GO against bots with different suggested latencies[6]. Alongside the gameplay, a questionnaire, to determine the individual experience, will be answered after each full game.

Konkrete Aufgaben

- Literature research regarding latency overall but within first-person shooters in particular
- Creating a qualitative experiment
 - Possibility to display a “custom latency”
 - Track player and game data and save to log-files
 - Find and use a suitable questionnaire about the in-game experience
- Perform the experiment
- Evaluate and analyse the results
 - Factual analysis using the log-files
 - Sentiment analysis using the questionnaires
- Write the paper

Erwartete Vorkenntnisse

- Experience with first-person shooters, CS:GO in particular
- Basic programming (e.g. Java, Python, C++, etc.)
- Data analysis

Weiterführende Quellen

- [1] https://link.springer.com/chapter/10.1007/978-3-642-39265-8_11
- [2] <https://dl.acm.org/doi/abs/10.1145/1167838.1167860>
- [3] <https://dl.acm.org/doi/pdf/10.1145/1016540.1016556>
- [4] <https://dl.acm.org/doi/abs/10.1145/3411764.3445245>
- [5] <https://dl.acm.org/doi/pdf/10.1145/2793107.2793109>
- [6] <https://dl.acm.org/doi/pdf/10.1145/3025171.3025224>

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