

Play games with no latency

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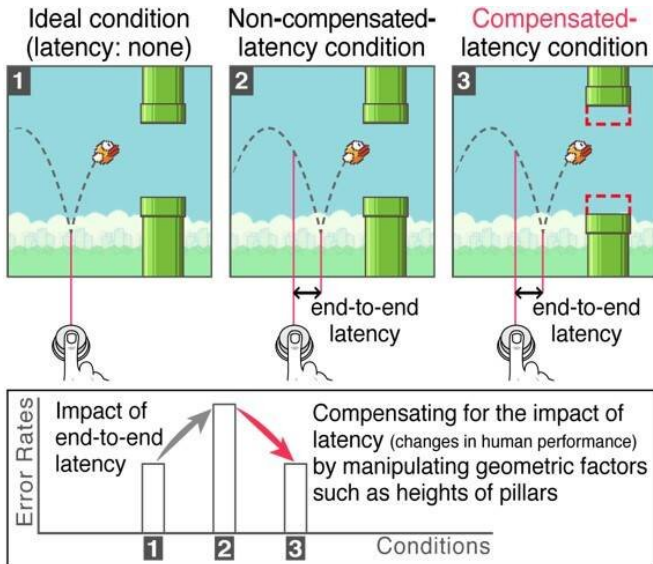


Figure 1. Overview of Geometric Compensation

One of the most challenging issues for game players looks to be resolved soon with the introduction of a zero-latency gaming environment. A KAIST team developed a technology that helps game players maintain zero-latency performance. The new technology transforms the shapes of game design according to the amount of latency.

Latency in human-computer interactions is often caused by various factors related to the environment and performance of the devices, networks, and data processing. The term "lag" is used to refer to any latency during gaming which impacts the user's performance.

Professor Byungjoo Lee at the Graduate School of Culture Technology in collaboration with Aalto University in Finland presented a [mathematical model](#) for predicting players' behavior by understanding the effects of latency on players. This cognitive model is capable of predicting the success rate of a user when there is latency in a moving target selection task that requires button

input in a time constrained situation.

The model predicts the players' task success rate when latency is added to the gaming environment. Using these predicted success rates, the design elements of the [game](#) are geometrically modified to help players maintain similar success rates as they would achieve in a zero-latency environment. In fact, this research succeeded in modifying the pillar heights of the Flappy Bird game, allowing the players to maintain their gaming performance regardless of the added latency.

Professor Lee said, "This technique is unique in the sense that it does not interfere with a player's gaming flow, unlike traditional methods which manipulate the game clock by the amount of [latency](#). This study can be extended to various games such as reducing the size of obstacles in the latent computing environment."

More information: Injung Lee et al. Geometrically Compensating Effect of End-to-End Latency in Moving-Target Selection Games, *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems - CHI '19* (2019). [DOI: 10.1145/3290605.3300790](#)

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