How to Git Gud: Skilled Gamers Optimize Interfaces for Performance

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ABSTRACT

When competing in most fields, human skill and performance combined with suitable equipment or tools are deciding factors in who comes out on top. In competitive video games or esports, this consists of player skill, software or in-game settings, and quality equipment, including computers, audio input/output devices, and other pieces of both hardware and software. In this study, we interviewed nine highly skilled esports players. We found that settings and equipment can vary widely and partially depend on player ability or strengths and weaknesses in specific skills. However, subjective personal preferences and intuitive use of software or hardware also play a role.

KEYWORDS

esports, competitive gaming, video games, performance optimization, computer games, user experience, human-computer interaction

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1 INTRODUCTION

In-game settings can optimize performance and decrease latency in video game play [**?**] which is typically demanding and requires a fast response. Display refresh rates, mouse, monitor, and GPU performance and settings all have critical roles in maximizing a player's advantage in competitive gaming. Gameplay performance is critically important in esports, which is a billion-dollar industry [**?**] with hundreds of millions of viewing hours and growing.

Professional and high-level video game players push the limits of their computers, both physically and through software. They are most sensitive to minute changes in interfaces affecting recognition speed and recall, optimizing their software and hardware interfaces to maximize their performance. Competitive video games, such as those played in major esports, have significant customization of game graphics such as texture quality, visual particles, and shadows, allowing for substantial user interface customization like the crosshair, colors, and keybinds. Players tweak and change these settings to give them the best performance, either of their PC via graphics settings or of the player themselves through improved recognition speed or reaction time.

In addition to the interface, the performance also lies in strategy and communication for high-level players. Esports games focus heavily on strategies and teamwork, allowing complex team play to overcome mechanical skill differences. For example, in the tactical first-person shooter game VALORANT, a 5-player team must work together to plant a 'spike' on an objective, which another 5-player team defends. Each team must utilize unique hero character abilities to clear areas of the map and eliminate enemy players. These games require almost constant communication from teammates, leadership, and decision-making skills to win. Developers create systems in the game to allow for quick and effective communication, and information-gathering [**?**].

We report here on ...

Our research has made the following contributions ...

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