Designing Rhythm Game Interfaces for Touchscreen Devices

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Project Overview
In this study, "Beats2 Prototypes", a rhythm game designed for Android tablets, was published and used to collect gameplay data for the purpose of comparing various different rhythm game interfaces for touchscreen devices.

Rhythm games often focus the player's beat recognition abilities, which can be measured by the tapping of objects on a touchscreen to the rhythm of the song. The success of a rhythm game depends on two main factors: 1) user responsiveness during gameplay, and 2) gameplay experience as a whole. Both factors are strongly influenced by the game's user interface design, defined as the placement and movement patterns of the game's note and tapbox elements.

This study consisted of three stages. In the *Design* stage, eight different user interface designs were drafted based on analysis of various existing commercial rhythm games. In the *Prototype* stage, these eight interface designs were implemented as game modes in the rhythm game, "Beats2 Prototypes", developed for the cross-platform Unity3 game engine. In the *Evaluation* stage, the game was published as an Android app on Google Play, with a built-in tracker for collecting data for this study.

Based on the results of the data collection, comparisons of touchscreen user interface designs were made on user responsiveness, measured by quantitative gameplay statistics, and gameplay experience, measured by qualitative feedback ratings. These comparisons were used to determine which interface design would be the best candidate for future rhythm game development.