Title	Various Approaches to Improving Entertainment Impact in Games
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Abstract

Human stress in one of the most important topics in psychology and game can be one of the most efficient tools to relieve stress. The more quality of the game has, the more efficient that game can relieve stress. That is why we should concern the enjoyment and the entertainment in games. Therefore, in this thesis, we present three ways to improve the entertainment impact in games.

The first way is to use game refinement theory, a unique theory that has been used as a reliable tool for measuring the attractiveness and sophistication of the games considered. This theory is originated from the concept of outcome uncertainty and was invented by Iida *et al.*. A game refinement measure is derived from a game information progress model and has been applied in various games. In this thesis, we apply game refinement theory to Pokemon, sports, RoShamBo and Snake game. We show how game refinement theory can be an essential tool to find comfortable settings of the games and improve the entertainment impact in games.

The second way is to develop an emotional AI. We believe that AI can improve the entertainment of the games significantly. This is because player usually spends a lot of time interacting with AIs in video games. So, adding emotional component in AI, which will makes the AI's behaviour more interesting and realistic, will explore the new experience for player. Therefore, we present a generic model for emotional AI in real-Time multiplayer fighting games. Furthermore, we implement emotional AI to our simulated game and perform evaluation experiment in order to verify the efficient of the proposed model.

The third way is to propose a new model for quantifying enjoyment between match in the same game. We believe that if we can figure out a reasonable model to quantify the enjoyment between matches in the same games, it means that we can truly touch the enjoyment which is so abstract. So, we can improve the entertainment impact of the game respectively. Therefore, we present the basis idea of this model and propose many further works in order to improve the proposed model.

We believe that these three approaches presented can effectively improve the entertainment impact in games. For each chapter, results obtained are discussed and concluding remarks are given. Further works should be investigated in many points as we have proposed in order to tangibly touch the entertainment.