

Automated Evaluation for AI Controllers in Tower Defense Game Using Genetic Algorithm

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This paper presents the research result of implementing evolutionary algorithms towards computational intelligence in Tower Defense game (TD game). TD game is a game where player(s) need to build tower to prevent the creeps from reaching their based. Penalty will be given if player losses any creeps during gameplays. It is a suitable test bed for planning, designing, implementing and testing either new or modified AI techniques due to the complexity and dynamicity of the game. In this research, Genetic Algorithm (GA) will be implemented to the game with two different neural networks: (1) Feed- forward (FFNN) and (2) Elman Recurrent (ERNN) used as tuner of the weights. ANN will determine the placement of the towers and the fitness score will be calculated at the end of each game. As a result, it is proven that the implementation of GA towards FFNN is better compared to GA towards ERNN.