

# The Evolution of AI Behavior in Video Games and How It Affects Game Design Philosophy

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## Introduction

The evolution of AI behavior in video games is a rich topic that many people have discussed. Understanding how the evolution of how AI behavior affects game design philosophy can lead to more satisfying AI implementation in future projects, potentially making video games more enjoyable.

Improving and adding to old AI methods keeps players engaged, especially within a single game franchise, as each iteration can add something new to challenge the users.

The purpose of this study is to explore the early theories, creation and the use of artificial intelligence in games, and how AI behavior in video games has changed throughout history.

## Research Questions

- What was the first game to implement artificial intelligence?
- How has AI implementation in video games changed?
- How has the evolution of game AI changed how video games are made?

## Software Project

The aim of this software product is to demonstrate the evolution of AI in video games throughout history in an interactive game.

The game would have the user fight against an AI opponent, but as the fight progresses, the opponents AI behavior would become increasingly complex. At all times there will be text on-screen explaining how the AI's behavior has changed/advanced and games it has pulled those behaviors from, starting with simple AI techniques to more advanced ones used today.

The game will also feature visual cue's about how the opponents AI will make it's next move, showing percentages of actions it can perform depending on factors such as health, distance and position to name a few. These factors will vary depending on at what stage the AI is currently at.



The goal of this software would be to teach users about how certain video games made use of AI methods and algorithms, as well as how they learned from their predecessors to advance their implementation of AI in their own video games.

## Similar Projects and Games

### RoboCup Soccer

RoboCup is an annual competition with the goal of creating a full team of robots that can play a game of soccer whilst complying with the official FIFA rules,



against the most recent winner of the World Cup.

A video was published on YouTube titled "RoboCup Robot Soccer History 1997 -- 2011" which demonstrates the evolution of AI and robotics from 1997 to 2011.

### Evoland (Video Game)

The video game Evoland is an RPG where the player unlocks new features and graphical improvements as they progress through the game. This project has a similar goal to that of Evoland, but rather than



Increasing the graphical fidelity of the game, it will increase the complexity of the game AI.