

Chapter XIV

Turing's Test and Believable AI

Introduction: Contemporary Game AI

It is very evident that current progress in developing realistic and believable game AI lags behind that in developing realistic graphical and physical models. For example, in the years between the development of *Neverwinter Nights* by Bioware and the release of its sequel *Neverwinter Nights 2* by Obsidian in collaboration with Bioware there were obvious and significant advances in the graphics. The character models in the first game are decidedly angular, the result of having limited resources to expend on the polygons required for simulating the appearance of natural curves and body shapes. No such problems now. A few years, and the difference is remarkable.

But how much has the AI progressed over the same time?

In both games the player controls one character through adventures while the computer AI controls the player's companions. Playing the first game, it was observed that the AI did not always help in the most natural manner. For example, companions

would be prone to running off to fight enemies that were still outside of the view of the player. Or perhaps ignore a fight in progress to disarm a trap instead, which clearly could wait until the current combat is completed.

There appears to have been limited progress in developing more realistic AI in the sequel, however. Companions still leave fights in progress to disarm traps. More distressingly, on occasion companions join fights when their path is partially obstructed, leaving them as ineffectual observers lurking behind a barrel while a vicious fight to the death occurs just yards away.

These two examples are from highly successful and polished games. Many more, often humorous, stories of obviously flawed game AI found in leading games have been collected by Baylor Wetzel (2004).

Given that current game AI often struggles with simple tasks, and often falls over in obvious ways, it may seem inappropriate to question whether game AI can pass the Turing Test. But in this chapter we present a review of the Turing Test and some of its key criticisms and variants. We then consider whether some form of the Turing Test might prove useful in the development and assessment of game AI.

To aid in this we also consider the practice of *believability testing*, what it means, how believability can be assessed, and some of the problems and issues that appear when one tries to determine whether or not a character or creature in a game is exhibiting convincing and natural life-like behaviour.

The Popular Turing Test

In popular conception, the Turing Test challenges an interrogator with the task of determining whether a correspondent—communicating via typed conversation on a computer terminal—is a human or a machine. The correspondents are located in another room and the only evidence the interrogator has, on which to make judgments, is the typed conversation itself. The typical view of this is that if the interrogator is unable to tell them apart, then the machine has beaten the test. For some, any AI that succeeds in beating the test must then be considered intelligent.

An annual competition for the Loebner prize is run along these lines. Each year several judges gather to converse with contestants and human confederates via computer terminals, and attempt to rate each conversation partner according to ‘human’ they believe then to be. So far no program entered has succeeded in fooling the judges. And yet Turing himself predicted that by the year 2000 computers would be sufficiently capable of passing the test to succeed in about a third of trials:

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