Interactive Storytelling: Approaches, Applications, and Aspirations

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ABSTRACT

Interactive digital storytelling (IDS) aims at generating dramatically compelling stories based on the user’s input. During a quarter of a century of research, IDS has promised to change the way computer games and other interactive applications tell stories. This paper reviews the theory behind IDS as well as the current state of IDS research, and studies whether – and how – IDS can improve interactive applications in general and computer games in particular.

Keywords: Computer Games, Interactive Digital Storytelling (IDS), Interactive Narrative, Interactive Storytelling, Multiple Players

INTRODUCTION

In the oral tradition of storytelling, a bard would adapt the story depending on the audience – even the structure of the story could vary within a certain confines (Propp, 1968; Campbell, 2008; Murray 1997, pp. 188–197). Only with the advent of the written media storytelling “petrified” and became to mean the process of an author crafting a reproducible composition. Instead, interactive storytelling has taken the original meaning emphasizing the reactive and performative aspects of storytelling. People engage in interactive storytelling, for example, in (live action) role-playing games, improvisational theatre (e.g., Forum Theatre; see Boal, 1979, pp. 139–142), tour guiding, and teaching. For example, a tour guide visiting the same location might tell different stories depending on whether the tour group consists of schoolchildren or pensioners and on the group’s questions and reactions. Similarly, a good teacher can adapt a lesson according to the feedback from the class.

Research on interactive digital storytelling (IDS) began in the 1980s with the seminal work of Brenda Laurel (Laurel, 1991). She took the ideas from the world of theatre and applied them to computer interfaces in general and to (in Laurel’s terms) “interactive narrative” (i.e., IDS) in particular. Formally put, an IDS application is “designed for users (interactors) to take part in a concrete interactive experience, structured as a story represented in a computer” (Peinado & Gervás, 2007).

To illustrate the process of interactive storytelling Laurel (1991, pp. 69–70) presents a flying wedge of possibilities (see Figure 1). As an example, let us think of a story-world based on a stranger arriving to a new city. Initially (as the stranger steps down from a bus) any story

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within the story-world is possible. As the user starts making decisions and affecting the story-world (meets people, finds a lodging, travels in the city), more and more of the possible stories become improbable and get to be potential stories (i.e., stories that could have taken place had the user decided to act differently). The range of probable stories becomes smaller with time until at some point there might be only one necessary outcome for the story left (e.g., death or leaving the city behind). Louchart et al. (2008) extend the flying wedge analogy by describing the story-world as a landscape of possible stories, where the hills mark dramatic attention and the valleys are the places where one can choose from different routes.

We can recognize three distinctive partakers in IDS systems: (1) an author who creates the story-world, (2) characters who inhabit the story-world, and a (3) user who interacts in the story-world. The author is a human who has designed the story-world (including the characters, events and props), where the stories take place. Characters are computer-controlled entities inhabiting the story-world, and the user is the human interacting with the story-world (typically as one of the characters). Whereas ‘author’ and ‘character’ are widely accepted terms in the literature, there is no such consensus about the term ‘user’, who is sometimes called ‘player’, ‘interactor’ or ‘participant’ (Smed & Hakonen, 2008). For the sake of clarity, we will consistently use the term ‘user’ when we refer to IDS.

In the next section, we will look into the roles of the author and user in more detail and compare interactive storytelling with other narrative forms.

ANALYSING INTERACTIVE STORYTELLING

The main difference between conventional narrative and interactive narrative is illustrated in Figure 2 (Aylett & Louchart, 2007). Conventional narrative (e.g., literature, movies and classical theatre) emphasizes the role of an author who constructs the story. Once the story is ready, it is presented to a passive audience, who experiences it subjectively. The presented story (e.g., a book or a film) remains the same.
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