

Endless Web

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Abstract

Endless Web is a game where a procedural content generator is deeply integrated into the mechanics, dynamics, and aesthetics. The game involves players exploring the generative space of its built-in content generator, by making decisions that influence the parameters to the generator. Players must build strategies around the choices they are making to ensure that levels are at an appropriate level of challenge for them, while simultaneously exploring to discover goals hidden in layers of the generative space.

Game Overview and Design Process

Endless Web is a platforming game that explores the potential for procedural content generation (PCG) to enable new kinds of games. Unlike other games that use PCG in the service of other game mechanics (Firaxis Games 2005; Toy et al. 1980; Saltsman 2009), *Endless Web* introduces a new kind of game mechanic, one which is built around the game’s underlying AI system—a variant of the Launchpad level generator (Smith et al. 2011).

Galactic Arms Race (Hastings et al. 2009) is an example of a game that has a similar AI-based design goal; however, player control over the generator is more indirect, with player behavior used as a fitness function for the generator. In *Endless Web*, the player interacts directly with Launchpad by manipulating its generation parameters, represented in the game as special glowing objects.

The core gameplay in *Endless Web* involves exploring Launchpad’s generative space. The story of the game is tied into this novel form of gameplay. The player takes on the role of an Eidolon, a fictional race of characters that inhabit humanity’s collective dreamscape. The player must search through the Dream in order to find humans who are trapped in their nightmares, strategizing about how to influence the generator to both find the dreamers and keep the game at an appropriate level of difficulty. In order to signpost the player, the game selects art and music assets based on the player’s progress through the story. *Endless Web*’s integration of content generation into the mechanics, dynamics, and aesthetics (Hunicke et al. 2004) of the game are indicators of a new game genre: the **PCG-based game**.

Endless Web was created following the AI-based game design process (Eladhari et al. 2011), by examining the

affordances of an existing AI system, designing a game based upon it, and then iterating on the design of both the generator and the game in parallel. The Launchpad level generator existed before the game was designed, and its design—specifically, its parameterized nature and ability to create short level segments—provided initial inspiration for the core game mechanics. Further detail on the influence of the generator upon the game, and vice versa, has been published previously (Smith et al. 2012).

Download and Installation Instructions

Endless Web is available to download here: <http://ewod.soe.ucsc.edu/EndlessWebAir.air>

The game is an Adobe AIR application that requires an active Internet connection at all times during play. Adobe AIR is Windows and Mac compatible. To download Adobe AIR, go here: <http://get.adobe.com/air>

References

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