

BhTSL, Behavior Trees Specification and Processing

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Abstract

In the context of game development, there is always the need for describing behaviors for various entities, whether NPCs or even the world itself. That need requires a formalism to describe properly such behaviors.

As gaming industry has been growing, many approaches were proposed. First, finite state machines were used and evolved to hierarchical state machines. As this wasn't enough, a more powerful concept appeared. Instead of using states for describing behaviors, people started to use tasks. This concept was incorporated in behavior trees.

This paper focuses in the specification and processing of these behavior trees. A DSL designed for that purpose will be introduced. It will also be discussed a generator that produces \LaTeX diagrams to document the trees, and a Python module to implement the behavior described. Additionally, a simulator will be presented. These achievements will be illustrated using a concrete game as a case study.

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1 Introduction

- Motivation - Design goals, ir direto ao assunto

2 State of the Art

- conceitos básicos

3 Architecture and Specification

- Gramática - Especificação

4 Tools

- processador



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