

Avan Analysis/Debug Tool and 3D Presentation

Introduction

This paper briefly looks at designing a visualization tool for debugging and validating a distributed autonomous system namely Soccer Simulation. Avan is an integrated team, consists of three parts: Soccer Player, Coach and Presentation. In the Presentation branch we have two parts: Analysis/ Debug tool and 3D Presentation.

Analysis/ Debug tool

Analysis/ Debug tool was developed to achieve a set of facilities to debug and analyze logged data at run-time to verify correct program behavior.

2D Log-player: for viewing of the match using the sserver log-file. Also it can present the local memory of the players that logged along the game.

Time-line Display (Task viewer): for viewing of the agent's behavior sequences(Consist of the tasks logged by the clients and sequences of opponent behavior detected and logged by the coach)[1].

Off-line Coach GUI: The user can arrange objects (players and ball) in the field with mouse and write the appropriate commands for training players.

Graphical Plan-Editor: The control system and programming of Avan agents are provided via a GUI called *Plan-Editor*. Plan-Editor uses Clang to generate *plan file* that represents the behavior of the agent.

3D Presentation

Avan 3D Presentation uses the OpenGL engine to display images of the match. This application was written in Delphi (V6). The viewer has the fastest engine for animating that will be executable in every system with medium speed [3],[4],[5] .

We have utilized the following applications for development:

3Dmax and Soft Image	For constructing objects such as player, ball, stadium, etc.
UV-technique, Photo Shop and Paint Shop pro	For creating texture of objects

The following items can be presented in the 3D viewer:

Field (with different texture), Goal, Player (with different texture), Ball, Stadium, Score, Shadow of objects, Rain, etc. [6],[2]

References

- [1] David Kortenkamp, *Designing visualization tools for a distributed control architecture*,
- [2] www.opengl.org
- [3] <http://nehe.gamedev.net>
- [4] www.delphi3d.net
- [5] www.delphigl.com
- [6] www.softimage.com