

Automated Commentaries for Simulated Soccer

Project Introduction

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Automated Commentaries for Simulated Soccer

1. Team Introduction

1.1. Justin Hogg



Justin has successfully completed an HND in Computing Studies and is currently studying Computer Science with a year in industry. The first six months of his year in industry were spent at Eli Lilly as a Systems Analyst. The following seven months were spent contracting for Hewlett Packard at Pfizer, as a support/Windows XP build engineer. He is particularly interested in programming and development - especially UNIX/LINUX, Oracle, Java, and web programming.

1.2. Akbar Sherwani



Akbar is studying Computer Science with a year in industry. Last year he worked at Merck Sharpe & Dohme as an Intranet Developer and at Barclays Capital as Technology Analyst. His work at Merck was based around JSP and at Barclays he enhanced his knowledge of Java and C#.

1.3. Adrien Martel



Adrien is studying Computer Science with a year in industry that he carried out at Accenture as a software engineer. Most of his work was within technology consulting contracted to work within a multinational insurance client. The role entailed front-end design and build using Java and also overlooking test orientation for customer documents using Database technologies.

1.4. Ahsan Mussa



Ash is studying Computer Science with a year in Industry. Last year he worked for GlaxoSmithKline, where he became familiar with project management, writing formal documents and enhanced his Java and HTML knowledge.

2. Project Introduction

2.1. Project Overview

*“By the year 2050,
develop a team of fully autonomous humanoid robots that can win against the
human world soccer champion team.”*

This is the objective of the RoboCupSoccer Project, an AI project of which the main focus is competitive soccer. This project has five leagues starting with a simulated league where all football games are handled by the RoboCup “Soccer Server” software (Independently moving software players (agents) play soccer on a virtual field inside a computer. Matches have 5-minute halves. This is one of the oldest fleets in RoboCupSoccer).

Robots ranging from a diameter of a maximum 18cm, to adult sized biped autonomous humanoid robots, play in the other four leagues.

The project we have undertaken concerns producing real-time audio commentaries for the simulated league’s software games using Java. All other robot league games are out of scope for our project. The project will examine three commentary systems that have been developed for the RoboCup simulated league. All produce real-time audio commentary on the simulated games using input data from the Soccer Server. We will determine their strengths and weaknesses before designing and implementing our own commentary system. Finally, we will assess our own program.

2.1 Soccer Server

The Soccer Server was “written (C++) to support competition among multiple virtual soccer players (agents) in an uncertain multi-agent environment, with real time demands as well as semi-structured conditions” [RoboCup Soccer Server manual pg 4]. It operates in cycles of 100ms.

The Soccer Server system is comprised of two main parts: the Soccer Server and Soccer Monitor.

The Soccer Server provides a virtual field and simulates all movements of a ball and the players, communicates with the clients and controls a game according to the rules.

2.2 Soccer Monitor

The Soccer Monitor provides a graphical representation of the virtual soccer pitch from the Soccer Server, including the players, the ball and the game events. It connects to the Soccer Server via UDP/IP and receives data in order to update the display.

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2.3 The Clients

Game activities are conducted in a client/server fashion – each client controls the movements of one player, therefore there is the same number of clients as players. Each client uses a UDP/IP socket to receive auditory and sensory information from the Soccer Server, and sends control commands to the server for its player.

3. Project Scope

We will use an existing version of the Soccer Server (including Soccer Monitor) and existing clients/players to provide the games our software will produce commentary for. There are a number of versions of the Soccer Server for both Windows and Linux, but research into their differences and the resources available at the university will determine the version that we will use.

Our project work will be confined to producing real-time audio commentary for the Soccer Server games. A connection to the server will be necessary to obtain the game events for which to produce commentary.

However, the following are out of scope of our project and will not be developed further as part of the project - **These will be used as provided to offer the platform for us to develop a commentary system:**

Soccer Server
The monitor
The Players & Clients
The voice (TTS) libraries

Additionally, it will be assumed that the host computer running the project will be dedicated for this purpose, and no further tasks will be performed concurrently. As such, the project will only consider optimisations that need to be made due to an impact on the commentary system and not the CPU usage as a whole.