trAIner

Vision Document

Overview

Artificial Intelligence is being discussed over virtually any form of media, but no game lets the user directly interfere with the training of such an AI. Furthermore, the concept of Machine Intelligence seems so complex and hard to grasp.

trAIner is an absorbing, immersive game experience that lets the player develop and train his own AI and then compete with other players, providing long term satisfaction and steadily increasing the players knowledge of how its AI learns and operates.

trAIner brings a new dimension to AI in video games including the key areas:

- **build your own maps :** design increasingly complex maps in order to further evolve the success of your AI
- **compete with other AIs:** check how well you trained your AI by competing with other players. Leave your legacy on the global scoreboard!
- **understand the complex nature of AI :** grasp how machines learn by immersing yourself in the process of mastering the game

hence, trAIner lets you train your own AI the same way you could train a Pokemon

Technology behind

trAIner is a single- and multiplayer cross-platform game written in Java, and thus can be played on any system or browser supporting Java.

For training the AI a genetic algorithm is used which is gradually developed by the player. In the map builder the user builds his own maps in a sandbox-style fashion.

Gameplay

As AI's are a thing we associate with the future, "trAIner" embraces this by adopting a highly futuristic design with neon colors across the whole game. The main idea of the game is to train an AI genetic algorithm on a variety of self built maps in the sandbox mode and then later to compete in "challenge courses" that are the same to every player. This tests the player's ability to think analytically and to stimulate out of the box thinking. After completing a challenge course the player gets his AI rated depending on how fast the course was finished. Then each player can see how well he did on the global scoreboard.

Stakeholders

Name	Description	Responsibilities
Project Manager	Manages the whole team	- ensures that the project development is equally distributed for each team member - ensures that all required artifacts are present & up-to-date - ensures that nobody falls behind their schedule, & if so, tries to help the member or assigns another team member to help - ensures that all/most requirements given by the stakeholders are met
Project Team	The team that develops the game	- come up with new ideas - help each other if a problem arises - develop the game - test the game
Players (end users)	The players play the game	- might give some feedback on how to improve the game - might report some bugs with the game - trained AI of will be part of the leaderboard
Project Sponsor		- gets status-updates on the process of the game development
The Partners	People outside of the project team that might help or suggest ideas.	- professor answers questions

Features

Need	Priority 1=low - 5=high	Features	Planned Release

Map Builder	5	- create basic canvas - add map elements	~08.11.18
Genetic Algorithm	5	- train AI - adjust parameters for learning	~22.11.18
Challenge Maps	4	- different levels with increasing difficulty - score tracking	~22.11.18
Scoreboard	3	- compare results globally - view stats	03.01.19
Power-Ups	1	- achievments for completing levels - rewards	03.01.19
Muli-language	1	- choose language	03.01.19

Sumamry

Confusion and misrepresentation of AI in the media and in the public as well as a lack of comprehension on how machines and algorithms learn seems to scare the general public away from taking interest in artifical intelligence. "trAIner" could be a gateway to introduce the general public to the concept of machine learning and maybe even to encourage some players to study AI more in-depth.

Group:

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