MONASH UNIVERSITY

FIT 3094 ARTIFICIAL LIFE, ARTIFICIAL INTELLIGENCE AND VIRTUAL ENVIRONMENTS 2016

ASSIGNMENT TWO: NEURAL NETWORKS
(20% OF YOUR FINAL MARK FOR THIS UNIT)

ASSIGNMENT DUE: 5:00pm WEDNESDAY 25th MAY 2016
STUDIO DEMO DUE: 12:00pm WEDNESDAY 25th MAY 2016

ASSIGNMENT OVERVIEW

Assignment 2: Trained artificial neural network bot

For this assignment you will create a simple two-player game and train an artificially intelligent bot to play the game using an artificial neural network.

Game specification criteria. Your game should:

- Be developed in C++ using OpenGL (the Cinder library is highly recommended)
- Be a continuous 2D or 3D 2-player game
- Have between 3 and 4 possible input controls for each player
- Implement a bot that triggers those input controls for one player, trained on a neural network.
- The bot should be difficult to beat for a new player.

SUBMISSION REQUIREMENTS:

- The game, with trained AI bot. Submitted as a Visual Studio solution, Xcode Project or g++ makefile, including trained bot and artificial neural network. Include all source code and build instructions to build your game. Your code should not rely on any 3rd party libraries with the exception of Cinder.
- Brief instructions on how to play the game.
- A 2-5 minute video of the neural network being trained, showing the improvement of your bot as it learned to play the game.

Your will also be required to give a brief demonstration of your game during the studio class on 25th May.

ASSESSMENT CRITERIA

Marks will be awarded based on the following criteria:

- Meeting the game specifications outlined above 50%
- Game complexity and creativity 20%

- Code quality (well documented, efficient, concise) 20%
- Bot training video and studio demo 10%

Submissions that do not compile will automatically receive a score of 0 for code quality and a maximum of 50% of the possible specification fulfilment score.

CODE INTEGRITY AND PLAGIARISM

All the code you submit for assessment must be your own and adhere to Monash University's strict academic integrity policy:
http://www.monash.edu.au/students/policies/academic-integrity.html

Violating this policy will result in a mark of 0 for this assignment. *Note that receiving a mark of 0 for this assignment means an automatic FAIL for the unit* (see the unit guide for details).