



Project 1

Gesture Recognition

AI for Interactive Environments

4003-552, 4005-752
Spring Quarter 20073

Due Dates

Project 1 is due on Saturday, 4/5/2008.

Project

The idea for this project is to study the neural network program on mycourses for mouse recognition and then to program your own neural network-based mouse recognition software in XNA/C#. Note: if you would rather do gesture recognition for the Wiimote or another accelerometer device, then you may.

Your project must contain the following elements:

1. The design of your program should be such that you could interface your gesture recognition to a game written in C#/XNA.
2. You must come up with a set of gestures that is not in the original mouse recognition software. You must then provide a set of training and test examples for your gestures. It is up to you in order to determine the training and test set for your program.
3. Your code must provide working training and testing of your gesture recognition. You may use the code from the mouse recognition software or a neural network from another source. You should not use a full NN library for this project and you should understand what the code you are using does. You must reference the authors of any code you use. The mouse recognition software is from the book, "AI Techniques for Game Programming" by Mat Buckland.
4. You must provide a writeup that contains:
 - a. Your name
 - b. A description of your program and design for your program.
 - c. How to run your program.
 - d. A description of your training and testing sets.
 - e. How the gesture recognition works and any problems that you had.
 - f. (Graduate Student Only) A description of the differences between your neural network and non-neural network programs and how they work.
5. (Graduate Student Only) Program a non-neural network-based gesture recognition program. It is expected that it will probably only recognize a subset of your neural network training and testing sets.

Before the deadline, please submit all of the above items to wtry (<https://doji.cs.rit.edu>) for grading. You will have to register yourself for the course before submitting, so please don't wait until close to the submission deadline before registering.

Grading

Your overall grade will be based on the following:

- Efficacy of design for inclusion into another project
- Gestures used
- Your program
- The training and test sets (25 points out of 100)
- The writeup (25 points out of 100)