Machine Learning

Session 1 Resources

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GETTING STARTED WITH MACHINE LEARNING - PART 1

Instructions
Visit the Kadenze Wekinator homepage at
http://wekinator.org/kadenze

This site includes an installer for the special version of the Wekinator software for this course. Please ensure you are using the latest version of the Kadenze Wekinator (version 2.1.0.6 or higher).

This page also includes examples of programs for getting inputs from sensors or other sources, and programs for controlling sound or animations using Wekinator.

Important: Ensure you only have one Wekinator project open at a time when you are doing an assignment! Otherwise our graders may get confused

a. Install the Kadenze version of Wekinator on your machine.

b. When you run this Kadenze version of Wekinator, it will prompt you to enter the assignment number you are working on. Make sure that whenever you work on this assignment, you always choose "Assignment 1, Part 1." This will ensure that all the work you do on Assignment 1 gets logged in one place, so you don't have to do it all in one sitting, or even within the same Wekinator project. You won't ever need to explicitly save your Wekinator project for your assignments to be graded.

c. Look through the example input and output programs provided in the bundle. (You won't be able to run all of these on your computer, since some depend on you having other hardware or software; don't worry about this!) You can optionally read more about these examples on the Wekinator website.

d. Go to http://wekinator.org/walkthrough and follow the instructions to get Wekinator set up with a very simple input (your mouse or webcam) and a very simple output (a simple sound generator or animation). If you have trouble getting this to work, use the Kadenze forum to ask for help.

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Instructions Continued

e. Try changing the training examples to see how this changes the behaviour of the system after it is re-trained. Spend some time experimenting with the trained models to start to understand how the models are changed.

f. In Wekinator, go to the Kadenze menu and select "Create Kadenze Assignment 1 submission."

g. Upload this .zip file to coursework "Getting Started with Machine Learning."

h. Complete the written assignment component as detailed on the next page.

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GETTING STARTED WITH MACHINE LEARNING - PART 2

Written Component

Brainstorm 3 scenarios in which supervised learning could be used to make a piece of interactive art or music. Each of your three scenarios should be between 100-300 words.

Specifically, describe:
a. What input devices or sensors might you use? (These don't have to be things that you own! Think big.)

b. What do you imagine changing the state of these sensors/devices? (e.g., motions of a person, state of the environment, ... ?)

c. What output processes might you use? (e.g., changing the melody or timbre of a sound, changing the position or color of an animated object, or something much more complicated. This doesn't have to be something you know how to do as a programmer!)

d. How do changes in the input relate to changes in the output? That is, how do the motions of a person drive changes in a computer generated melody? Or how do changes in the amount of traffic on a street influence changes in an animated character? etc.

e. If you came up with this system because you thought it would be interesting / useful / fun / otherwise a good idea, say a little bit about your motivation.

Go to the Coursework forum for this assignment: "Getting Started With Machine Learning", and post each of your scenarios as a separate forum post (3 total).

You WILL be graded on the length of your posts!

Additionally, you must respond to at least one scenario from one other student by browsing the forum and leaving a comment. (This could be asking a question, suggesting how the idea could be taken further, or just saying that you like it.) Your response post should be between 30 and 200 words.

In order to get full grades for this part of the assignment, you need to leave FOUR posts in total, in the "Getting Started With Machine Learning" forum: 3 new posts with your 3 scenarios, and 1 (or more) responses to another post.

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