Neural Nets: Description

In this lab, we will implement the basic components of a standard neural network learning algorithm. Our goal is to train a fully connected neural network for an image classification task. An image classification task requires assigning a particular object category to a given image. We will be considering images that belong to 20 different object classes such as "airplane", "bicycle","car", "sheep", etc. For instance, an image below would be considered as an instance of a "sheep" object class:

Just like with the previous lab, you will be given a set of visual features describing training and testing images. Your goal will then be to implement a neural network algorithm that could be trained on those features to solve a 20 object class image classification task.

In case you want to work on this problem outside of the EdX environment, we provide the required data files and a helper function SplitData in the following zip file: Lab12.zip.

Note that you if you are working outside of the EdX environment you should use your StandardizeData function from Lab 11. Furthermore, note that this lab builds on top of the function that you will be implementing. Therefore, if you are working outside of the EdX environment, you need to complete each part before proceeding

to another one. If you are working inside the EdX environment, it is highly recommended but not necessary to complete one part before starting another one. Note that even if your code in the earlier parts is incorrect, you can still get the full credit for the later parts if they are implemented correctly.