**Progress Schedule**

Currently, I have found data of over 500 wells from a petroleum reservoir in Texas. Those data are updated until this year. I’ve picked up over 200 wells whose production curve has been identified as smooth decline curve. The data has been preprocessed.

The code has been written in Java. I am not using any imported packages. I was only implementing artificial neural network to classify the wells. The backpropagation training algorithm is adopted.

The data has not been labelled yet since the types of wells are determined by their Estimated Ultimate Reserve (EUR) value. This value needs to be generated by some commercial software (Value Navigator). After we have got the EUR, we give the wells their own type labels. With the data and labels, we train well production data with ANN to further classify them.

**Challenges**

I need to learn how to use the software Value Navigator. This software is a professional software specifically used to predict EUR for wells production data.

The implemented neural network can be used to classify the MNIST data sets with a decent high accuracy (above 90%). However, the data for wells production are not that clean. They have different time length, they may not be independent from each other. In addition, the data are recorded from almost 10 years ago until this year. In this time range, many factors has been influencing the production such that the different production data curve are influenced by different factors. I am not sure if that ANN can take all these influences into consideration and output a good label prediction.

**Answer to the proposal comments**

1. The data may not be publicly posted since the account info was purchased by our department. However, it can be provided if someone needs to verify my model
2. The main classification criterion is the type. And the type was given through a probabilistic method (I am still working on how to efficiently and correctly label the wells, also this is my research topic for master’s).
3. The production data has been influenced by many factors through its life. We mainly focus on the wells that are relatively new (around 10 years) and still alive. Although the wells are new but there are still unknown factors which are keeping influencing production profile.
4. When I have new wells, I mean I have relatively new wells with short history. I will classify the new wells with short history into one of those labelled types using the trained neural networks. With the type identified, I would apply type well methodology to further predict its EUR for oil companies’ decision making.