**Observation of existing or similar system**

**Comparison with other similar systems**

Nepali printed letter recognition and extraction is a field where very less significant research has been carried out. The letter or word recognition and extraction is usually done using either ANN or CNN. We consider CNN instead of ANN since CNN is more accurate.

The paper ”Optical Character Recognition for Nepali, English Character and Simple Sketch Using Neural Network” by Shakya et al. [6] This paper suggests the use of Artificial Neural Network with back propagation with two hidden layers for classification of Nepali string with adaptive learning rate.

Alexnet and Googlenet are both for experiments. Googlenet has the high accuracy than Alexnet. Our proposed network structure is significantly better than Alexnet and Googlenet.

Our research focuses on Deep Learning approach using Convolutional Neural Network as this approach has proved to be promising in the field of Optical Character Recognition. Real world data sets as well as synthesized data sets are used to obtain a large amount of data to minimize the chances of over fitting. In general, the model we proposed is effective, which can achieve excellent classification performance, and is more suitable for deployment.

**Common System Features**

* Convolution Neurological Network(CNN)

Our purposed system is also based on CNN as the other systems but with a large composition of data sets with the use the Deep Learning approach.

* Based Graphical User Interface

The extraction of data is shown in a graphical form like existing system. It will show a clear display of Devanagari letters.