# MLND Deep Learning Capstone  
Project to detect Street View House Number using tensorflow, deep learning platform   
   
## Source Code  
- ` capstone\_preparation\_project.ipynb `  
- ` Capstone\_digitStruct.ipynb `  
- ` capston\_digitStructMatToCsv.ipynb `  
- ` capstone\_main\_preprocess\_project.ipynb `  
- ` capstone\_main\_CNN\_project `  
   
## Requirements  
  
- Python 2.7

- [Jupyter Notebook]( http://jupyter.org/install.html)  
- [TensorFlow](<http://www.tensorflow.org/>)  
- [NumPy](http://www.numpy.org/)  
- [matplotlib](http://matplotlib.org/)  
- [scikit-learn](http://scikit-learn.org/stable/)  
- [SciPy library](http://www.scipy.org/scipylib/index.html)  
- [Six](http://pypi.python.org/pypi/six/)  
- [h5py](http://pypi.python.org/pypi/h5py/)  
  
  
This project files are tested and optimized 32GB intel Core7 system with GTX1080 GPU.  
  
You will also need to have software installed to run and execute an Jupyter Notebook`  
  
## Run  
  
Open `Ipython Notebook` in the root folder by type “jupyter notebook” on the shell command line(linux) or command line(windows)  
Open the 5 Files and run each cell one by one in the files.  
  
## Data  
  
This project uses the [The Street View House Numbers (SVHN) Dataset](http://ufldl.stanford.edu/housenumbers/)   
These dataset are downloaded and extracted in ` capstone\_preparation\_project.ipynb ` and ` capstone\_main\_preprocess\_project.ipynb `