11.8.2022:

* Better understanding of the code:
  + main files: DeepDPM, clusternetasmodel, classifiers
  + main args (gpus, use\_labels\_for\_eval)
  + log
* Go deep – **Clustering net**:
  + Map Supplemental Material (chapter 7):
    - input layer, a single hidden layer, and an output layer
    - The number of hidden units was always 50 in all our experiments (changing that number had little effect on the results).
    - The (changing) number of neurons in the output layer was K
* Go deep - **Subclustring net**:
  + SHAPE is input dim(from clustering net) -> Hidden\_dim \* K -> 2 \* K
  + 2 FC layes
  + Hidden\_dim = 50 is hard coded
  + detach different subclustering nets - zeroing out the weights connecting between different subnets. And also zero their gradient
  + Params: Mnist, Initial K = 1
  + Changes I done:
    - First Run:
      * Hidden\_dim = 50
      * Add dropout layers between the Fc layers with drop = 0.5
      * ->Subclustring Params: 652
      * Result: NMI: 0.94161, ARI: 0.95366, acc: 0.9787, final K: 10
    - Second Run:
      * Hidden\_dim = 75
      * Add dropout layers between the Fc layers with drop = 0.5
      * ->Subclustring Params:977 (13 params for each additional neuron?)
      * Result: NMI: 0.94165, ARI: 0.95372, acc: 0.97873, final K: 10
    - Imbalance with dropout ?