# **Problem Set 3**

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**Part 1: Tutorials**

From <https://www.tensorflow.org/tutorials/>  
The contents of these tutorials are tools for solving this assignment:   
 - MNIST For ML Beginners  
 - Deep MNIST for Experts  
 - TensorFlow Mechanics 101

- Convolutional Neural Networks  
  
**Part 2: Sample Run**

TensorFlow is already installed on the SCC cluster. Make sure you are capable of running the following demo on the SCC cluster …This is a link to the SCC cluster tutorial ...  
  
**Part 3: Building an Architecture**

(20 points)  
  
**Part 4: Training and Testing your Model**

(40 points)  
We will do this on the architecture you built from scratch  
We will also do this on a pre-trained model (on ImageNet) and compare the performance. Download from: …  
  
**Part 5: Model Variants**

(40 points)  
Regularization: w/ and w/out dropout (useful for v large networks)  
Activation functions  
Optimizer (SGD LR)  
Cost function