
ECE-503 Prelab 1

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1 What's the name of the given training dataset?

The MNIST database (Modified National Institute of Standards and Technology database) is a large database of handwritten digits that is commonly used for training various image processing systems. The file name of the training dataset is **X1600.mat**.

2 What's the value of n_0 , n_1 , n_2 ... n_j ?

784

3 What's the size of u_j and C_j ?

u_j — 784x6 C_j — 784x784

4 Explain in words how to implement calculation of mean vector?

The columns of the matrix is added to each other keeping the rows intact to obtain a single column matrix or vector and dividing the vector by the number of column, we can obtain the mean of the matrix or dataset.

5 For the given principle axis setup, what's the dimension of U_{q_j} ?

784x29