



Machine Learning  
CSE475

**Lab Manual on**

# Implementing Convolutional Neural Network using Keras in Python

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**Objective:**

In this lab, we will learn the basics of CNN using Keras, and TensorFlow. After that, we will do a hands-on implementation in Python using Keras, TensorFlow, Jupyter notebook and other related libraries such as Pandas, sklearn, NumPy, and matplotlib. In the end, we will generate a report for our produced model and measure it from a different aspect.

**Tasks:**

1. Import necessary libraries
2. Load dataset from CSV file
3. Create a training and testing dataset from there
4. Reshaping the data based on their type
5. Checking the shapes of the data
6. Loading images pixel values and viewing it using matplotlib
7. Creating CNN model using Keras
8. Compiling the model
9. Training the model using the training dataset
10. Analyzing the loss and accuracy
11. Evaluating the model, the using testing dataset
12. Making prediction using the model