**CSE512 – Assignment 3**

**Programming Report**

**Output for k=1**

========================= Result =========================

99.44 % accuracy for 0 digit

84.07 % accuracy for 1 digit

91.53 % accuracy for 2 digit

83.06 % accuracy for 3 digit

96.69 % accuracy for 4 digit

95.05 % accuracy for 5 digit

95.03 % accuracy for 6 digit

98.32 % accuracy for 7 digit

98.28 % accuracy for 8 digit

92.22 % accuracy for 9 digit

93.32 % is the overall accuracy of the GMM

**Output for k=3**

========================= Result =========================

98.88 % accuracy for 0 digit

86.81 % accuracy for 1 digit

93.22 % accuracy for 2 digit

84.15 % accuracy for 3 digit

97.24 % accuracy for 4 digit

96.15 % accuracy for 5 digit

94.48 % accuracy for 6 digit

98.32 % accuracy for 7 digit

97.70 % accuracy for 8 digit

93.89 % accuracy for 9 digit

94.05 % is the overall accuracy of the GMM

**Output for k=4**

========================= Result =========================

99.44 % accuracy for 0 digit

85.71 % accuracy for 1 digit

93.79 % accuracy for 2 digit

85.25 % accuracy for 3 digit

97.24 % accuracy for 4 digit

96.70 % accuracy for 5 digit

95.58 % accuracy for 6 digit

98.32 % accuracy for 7 digit

97.70 % accuracy for 8 digit

92.78 % accuracy for 9 digit

94.21 % is the overall accuracy of the GMM

**Readme –**

For executing the code:

python GMMClass.py --component *1/3/4* --train *path\_to\_optdigits.train* --test *path\_to\_optdigits.test*

e.g., python GMMClass.py --component 4 --train optdigits.train --test optdigits.test