Due: Monday, March 22. (Note assignment has been postponed from original due date.)

This assignment is worth 10% of final grade

1. Suppose you were about to design a classifier that would take photos of faces as input and then classify them as to whether or not the face was that of a female or a male. What digitally encodable features would you include in such a classifier?

2. Given the following training data, use the k nearest neighbours method (with $k = 3$) to answer the following questions (use Euclidean distance as your distance metric).

   Training Data:

student	number of courses	number of assignments	busy?
1	5	6	busy
2	4	4	busy
3	4	5	busy
4	2	1	not busy
5	1	1	not busy
6	3	0	not busy

   Is a student with 4 courses and 3 assignments busy? How about one with 2 courses and 2 assignments? (Show your work!)