ECSI/ECII 3206: ARTIFICIAL INTELLIGENCE [and EXPERT SYSTEMS]
GROUP ASSIGNMENTS
DUE DATE: last Week to Exams

Assessment Instructions:
The assignment will include a written report of the work and a 15 minutes presentation Demo for the practical in class.

IMAGE RECOGNISION [GROUP 1]

i. Did you know that every time you upload a photo to Facebook, the platform uses facial recognition algorithms to identify the people in that image? Or that certain governments around the world use face recognition technology to identify and catch criminals? I don't need to tell you that you can now unlock smartphones with your face!
The applications of this sub-domain of computer vision are vast and businesses around the world are already reaping the benefits. The usage of face recognition models is only going to increase in the next few years
Create a simple image recognition application where We are given a bunch of faces – possibly of your other group members. Call this bunch of faces as our "corpus". Now, we are given image of yet another student from another group ("visitor"). The task is simple – identify if this "visitor" is among those present in the "corpus". [15 marks]

ii. The crop yield in Kenya is degrading because farmers are unable to detect diseases in crops during the early stages. Can AI be used for disease detection in crops? If yes, explain. [5 marks]

COLLEGE CHATBOT AGENT [GROUP 2]

i. The College bot project is to be built using artificial algorithms that analyses user's queries and understand user's message. This System is a web application, which provides answers to the query of the student. Students just have to query through the bot. Students can chat using text. The System uses built in artificial intelligence to answer the query. The answers are appropriate what the user queries. The User can query any college related activities through the system. The user does not have to personally go to the college for enquiry. The system replies using an effective Graphical user interface which implies that as if a real person is talking to the user
[15 marks]

ii. Explain **Markov's decision** process with the aid of an example.
[5 marks]

SENTIMENT ANALYSIS [GROUP 3]

i. Social media has almost become synonymous with "big data" due to the sheer amount of user-generated content. Mining this rich data can prove unprecedented ways to keep a pulse on opinions, trends, and public sentiment. Facebook, Twitter, YouTube, WeChat, WhatsApp e.t.c Furthermore, every generation is spending even more time on social media than their predecessors. This means that social media data is will become even more relevant for marketing, branding, and business as a whole.

While there are many popular social media platforms out there, Twitter is the classic entry point for practicing machine learning.

With Twitter data, you get an interesting blend of data (tweet contents) and meta-data (location, hashtags, users, re-tweets, etc.) that open up nearly endless paths for analysis.Create a simple application does sentiment analysis about some given product on twitter

Data Sources

Twitter API – The twitter API is a classic source for streaming data. You can track tweets, hashtags, and more.

StockTwits API – StockTwits is like a twitter for traders and investors. You can expand this dataset in many interesting ways by joining it to time series datasets using the timestamp and ticker symbol.

[HINT: you may use either NLTK or Tweepy and TextBlob]

[15 marks]

ii. Show the working of the **Minimax algorithm** using Tic-Tac-Toe Game

[5 marks]