AI SINGS

Prompt:

Music has many patterns embedded within its structures: from genre defining motifs to lyrical devices common across artists, it is often minor differences between songs, stitching the accepted molds into new creations, which make any given song *unique*. In light of this, one can see how an AI program might take advantage of these patterns, interposed with variations, to generate songs independent of human input. Your goal is to develop a program or system which generates one or more of the following musical components: lyrics, melodies, or harmonies.

Evaluation:

As presented in the prompt, there are three criteria by which your project will be evaluated: lyrical, melodic, and harmonic generation. As an additional feature, your program might generate a demo performance based on the music it concocts. Each project will be judged by a final presentation which demonstrates its features and methodologies therefor. These features will be considered:

LYRICS: The quality of your program's lyrical generation will be evaluated by its adherence to English grammar, semantic cohesion, variability in output, and ability for a user to specify style (eg. a "mode" option which allows a user to select a specific poetic meter or style of vocabulary).

MELODY: The worth of your program's melody generation will be evaluated by its tendency to conform to culturally familiar patterns (ie. it generates melodies that a person might actually compose for a layman audience), variability in output, and ability for a user to specify style (cf. "LYRICS").

HARMONY: The value of your program's harmonic generation will be evaluated by its fittingness to its generated melodies.

DEMO PERFORMANCES: This feature will not be weighed as heavily as the former three. Nonetheless, your project will be more positively evaluated if it can produce a sound demos for its generated melodies, harmonies, and lyrics.

YOU DO NOT need to develop all of the above listed features. If your project generates wonderful lyrics but has no capacity for melodic or harmonic generation, it could very well win. The quality of any present feature is more important than the vastness of features.

Procedure:

You will have until the afternoon of Sunday the 13th to finish your project and prepare a presentation. You will be assigned a presentation time on the 13th. You may work solo or in a group.

For use in the San Diego State University AI Club Hack-A-Thon

<u>Resources and Advice</u>:

Some useful keywords to research are *Tensorflow*, *PyTorch*, *LSTM*, *Recurrent Networks*, *Text Generation*.

Do not feel you need to go too far out of your knowledge with this project. While there are some areas to use some complex machine learning models, you could very well use many techniques which do not utilize machine-learning.

While you should not copy a project online, there are many tutorials and learning resources available through internet searches which can help you along the way of your project's development